



#8

SEQUENCE LISTING

<110> Makowski, Lee
Hyman, Paul
Williams, Mark

<120> STAGED ASSEMBLY OF NANOSTRUCTURES

<130> 8471-010-999

<140> 10/080,608

<141> 2002-02-21

<160> 180

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 28

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 1

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Gln | Leu | Glu | Asp | Lys | Val | Glu | Glu | Leu | Leu | Ser | Lys | Asn | Tyr |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| His | Leu | Glu | Asn | Glu | Val | Ala | Arg | Leu | Lys | Lys | Leu | | | | |
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<210> 2

<211> 28

<212> PRT

<213> Unknown

<220>

<223> Probable variant of homo sapiens protein.

<400> 2

| | | | | | | | | | | | | | | | |
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| Thr | Asp | Thr | Leu | Gln | Ala | Glu | Thr | Asp | Gln | Leu | Glu | Asp | Glu | Lys | Tyr |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Ala | Leu | Gln | Thr | Glu | Ile | Ala | Asn | Leu | Leu | Lys | Glu | | | | |
| | | 20 | | | | | 25 | | | | | | | | |

<210> 3

<211> 28

<212> PRT

<213> Unknown

<220>

<223> Probable variant of homo sapiens protein.

<400> 3

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Arg | Leu | Glu | Glu | Lys | Val | Lys | Thr | Leu | Lys | Ala | Gln | Asn | Tyr |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Glu | Leu | Ala | Ser | Thr | Ala | Asn | Met | Leu | Arg | Glu | Gln | | | | |
| | | 20 | | | | | 25 | | | | | | | | |

<210> 4

<211> 35

<212> PRT

<213> *Mus musculus*

<400> 4

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Glu | Thr | Gln | His | Lys | Asn | Glu | Arg | Leu | Thr | Ala | Glu | Val | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Leu | Gln | Lys | Lys | Leu | Ser | Thr | Leu | Ser | Arg | Glu | Phe | Lys | Gln | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg | Asn | Leu | | | | | | | | | | | | | |
| | | 35 | | | | | | | | | | | | | |

<210> 5
 <211> 35
 <212> PRT
 <213> Homo sapiens

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Lys | Glu | Leu | Thr | Gly | Glu | Asn | Glu | Ala | Leu | Glu | Lys | Lys | Ala | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Leu | Lys | Glu | Arg | Ile | Gln | Tyr | Leu | Ala | Lys | Glu | Ile | Glu | Glu | Val |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Lys | Asp | Leu | | | | | | | | | | | | | |
| | | 35 | | | | | | | | | | | | | |

<210> 6
 <211> 33
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 33
 <223> Xaa = Any Amino Acid

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Gly | Val | Gln | Ala | Glu | Glu | Gln | Lys | Leu | Ile | Ser | Glu | Glu | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Leu | Arg | Lys | Arg | Arg | Glu | Gln | Leu | Lys | His | Lys | Leu | Glu | Gln | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Xaa | | | | | | | | | | | | | | | |

<210> 7
 <211> 33
 <212> PRT
 <213> Mus musculus

<220>
 <221> VARIANT
 <222> 33
 <223> Xaa = Any Amino Acid

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Gly | Met | Arg | Arg | Lys | Asn | Asp | Thr | His | Gln | Gln | Asp | Ile | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asp | Leu | Lys | Arg | Gln | Asn | Ala | Leu | Leu | Glu | Gln | Gln | Val | Arg | Ala | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Xaa | | | | | | | | | | | | | | | |

<210> 8
 <211> 32
 <212> PRT
 <213> Unknown

<220>

<223> Probable variant of Mus musculus protein

<400> 8

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Ser | Leu | Glu | Asn | Arg | Val | Ala | Val | Leu | Glu | Asn | Gln | Asn | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Leu | Ile | Glu | Glu | Leu | Lys | Ala | Leu | Lys | Asp | Leu | Tyr | Ser | His | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |

<210> 9

<211> 33

<212> PRT

<213> Schizosaccharomyces pombe

<400> 9

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Thr | Leu | Lys | Glu | Leu | His | Ser | Ser | Thr | Thr | Leu | Glu | Asn | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Leu | Arg | Gln | Lys | Val | Arg | Gln | Leu | Glu | Glu | Glu | Leu | Arg | Ile | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |

Lys

<210> 10

<211> 885

<212> PRT

<213> Mus musculus

<400> 10

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ile | Gly | Val | Ser | Val | Ala | Glu | Cys | Lys | Ser | Val | Pro | Gly | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Ser | Thr | Pro | His | Ser | Lys | Asp | His | Ser | Ser | Pro | Phe | Tyr | Ser | Pro |
| | | | 20 | | | | 25 | | | | | 30 | | | |
| Ser | His | Asn | Gly | Leu | Leu | Ala | Asp | His | His | Glu | Ser | Leu | Asp | Asn | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Val | Ala | Arg | Glu | Ile | Gln | Tyr | Leu | Asp | Glu | Val | Leu | Glu | Ala | Asn | Cys |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Cys | Asp | Ser | Ser | Val | Asp | Gly | Thr | Tyr | Asn | Gly | Ile | Ser | Ser | Pro | Glu |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Pro | Gly | Ala | Ala | Ile | Leu | Val | Ser | Ser | Leu | Gly | Ser | Pro | Ala | His | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Val | Thr | Glu | Ala | Glu | Pro | Thr | Glu | Lys | Ala | Ser | Gly | Arg | Gln | Val | Pro |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Pro | His | Ile | Glu | Leu | Ser | Arg | Ile | Pro | Ser | Asp | Arg | Met | Ala | Glu | Gly |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Glu | Arg | Ala | Asn | Gly | His | Ser | Thr | Asp | Gln | Pro | Gln | Asp | Leu | Leu | Gly |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asn | Ser | Leu | Gln | Ala | Pro | Ala | Ser | Pro | Ser | Ser | Ser | Thr | Ser | Ser | His |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Cys | Ser | Ser | Arg | Asp | Gly | Glu | Phe | Thr | Leu | Thr | Thr | Leu | Lys | Lys | Glu |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Ala | Lys | Phe | Glu | Leu | Arg | Ala | Phe | His | Glu | Asp | Lys | Lys | Pro | Ser | Lys |
| | | | 180 | | | | 185 | | | | | | 190 | | |
| Leu | Phe | Glu | Glu | Asp | Glu | Arg | Glu | Lys | Glu | Gln | Phe | Cys | Val | Arg | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Val | Arg | Pro | Ser | Glu | Glu | Met | Ile | Glu | Leu | Glu | Lys | Glu | Arg | Arg | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Leu | Ile | Arg | Ser | Gln | Ala | Val | Lys | Lys | Asn | Pro | Gly | Ile | Ala | Ala | Lys |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Trp | Trp | Asn | Pro | Pro | Gln | Glu | Lys | Thr | Ile | Glu | Glu | Gln | Leu | Asp | Glu |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Glu | His | Leu | Glu | Ser | His | Arg | Arg | Tyr | Lys | Glu | Arg | Lys | Glu | Lys | Arg |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Gln | Gln | Glu | Gln | Leu | Gln | Leu | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Leu |

| | | | | |
|---------------------|-------------------------|-------------------------|--|-----|
| 770 | | 775 | | 780 |
| Lys Thr Ala Pro Gly | Lys Ile Glu Lys Val | Lys Pro Pro Pro Ser Pro | | |
| 785 | 790 | 795 | | 800 |
| Thr Thr Glu Gly Pro | Ser Leu Gln Pro Asp | Leu Ala Pro Glu Glu Ala | | |
| | 805 | 810 | | 815 |
| Ala Gly Thr Gln Arg | Pro Lys Asn Leu Met | Gln Thr Leu Met Glu Asp | | |
| | 820 | 825 | | 830 |
| Tyr Glu Thr His Lys | Ser Lys Arg Arg Glu Arg | Met Asp Asp Ser Ser | | |
| | 835 | 840 | | 845 |
| Tyr Thr Ser Lys Leu | Leu Ser Cys Lys Val Thr | Ser Glu Val Leu Glu | | |
| | 850 | 855 | | 860 |
| Ala Thr Arg Val Asn | Arg Arg Lys Ser Ala Ser | Gly Leu Ala Leu Gly | | |
| 865 | 870 | 875 | | 880 |
| Gly Arg Asp Leu Arg | | | | |
| | 885 | | | |

<210> 11
 <211> 3878
 <212> PRT
 <213> Homo sapiens

<400> 11

| | |
|---|--|
| Met Glu Asp Glu Glu Arg Gln Lys Lys Leu Glu Ala Gly Lys Ala Lys | |
| 1 5 10 15 | |
| Ile Glu Glu Leu Ser Leu Ala Phe Leu Val Arg Gln Leu Ala Gln Phe | |
| 20 25 30 | |
| Arg Gln Arg Lys Ala Gln Ser Asp Gly Gln Ser Pro Ser Lys Lys Gln | |
| 35 40 45 | |
| Lys Lys Lys Arg Lys Thr Ser Ser Ser Lys His Asp Val Ser Ala His | |
| 50 55 60 | |
| His Asp Leu Asn Ile Asp Gln Ser Gln Cys Asn Glu Met Tyr Ile Asn | |
| 65 70 75 80 | |
| Ser Ser Gln Arg Val Glu Ser Thr Val Ile Pro Glu Ser Thr Ile Met | |
| 85 90 95 | |
| Arg Thr Leu His Ser Gly Glu Ile Thr Ser His Glu Gln Gly Phe Ser | |
| 100 105 110 | |
| Val Glu Leu Glu Ser Glu Ile Ser Thr Thr Ala Asp Asp Cys Ser Ser | |
| 115 120 125 | |
| Glu Val Asn Gly Cys Ser Phe Val Met Arg Thr Gly Lys Pro Thr Asn | |
| 130 135 140 | |
| Leu Leu Arg Glu Glu Glu Phe Gly Val Asp Asp Ser Tyr Ser Glu Gln | |
| 145 150 155 160 | |
| Gly Ala Gln Asp Ser Pro Thr His Leu Glu Met Met Glu Ser Glu Leu | |
| 165 170 175 | |
| Ala Gly Lys Gln His Glu Ile Glu Glu Leu Asn Arg Glu Leu Glu Glu | |
| 180 185 190 | |
| Met Arg Val Thr Tyr Gly Thr Glu Gly Leu Gln Gln Leu Gln Glu Phe | |
| 195 200 205 | |
| Glu Ala Ala Ile Lys Gln Arg Asp Gly Ile Ile Thr Gln Leu Thr Ala | |
| 210 215 220 | |
| Asn Leu Gln Gln Ala Arg Arg Glu Lys Asp Glu Thr Met Arg Glu Phe | |
| 225 230 235 240 | |
| Leu Glu Leu Thr Glu Gln Ser Gln Lys Leu Gln Ile Gln Phe Gln Gln | |
| 245 250 255 | |
| Leu Gln Ala Ser Glu Thr Leu Arg Asn Ser Thr His Ser Ser Thr Ala | |
| 260 265 270 | |
| Ala Asp Leu Leu Gln Ala Lys Gln Gln Ile Leu Thr His Gln Gln Gln | |
| 275 280 285 | |
| Leu Glu Glu Gln Asp His Leu Leu Glu Asp Tyr Gln Lys Lys Lys Glu | |
| 290 295 300 | |
| Asp Phe Thr Met Gln Ile Ser Phe Leu Gln Glu Lys Ile Lys Val Tyr | |
| 305 310 315 320 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Met | Glu | Gln | Asp | Lys | Lys | Val | Glu | Asn | Ser | Asn | Lys | Glu | Glu | Ile |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Gln | Glu | Lys | Glu | Thr | Ile | Ile | Glu | Glu | Leu | Asn | Thr | Lys | Ile | Ile | Glu |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Glu | Glu | Lys | Lys | Thr | Leu | Glu | Leu | Lys | Asp | Lys | Leu | Thr | Thr | Ala | Asp |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Lys | Leu | Leu | Gly | Glu | Leu | Gln | Glu | Gln | Ile | Val | Gln | Lys | Asn | Gln | Glu |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Ile | Lys | Asn | Met | Lys | Leu | Glu | Leu | Thr | Asn | Ser | Lys | Gln | Lys | Glu | Arg |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Gln | Ser | Ser | Glu | Glu | Ile | Lys | Gln | Leu | Met | Gly | Thr | Val | Glu | Glu | Leu |
| | | | 405 | | | | | | 410 | | | | | 415 | |
| Gln | Lys | Arg | Asn | His | Lys | Asp | Ser | Gln | Phe | Glu | Thr | Asp | Ile | Val | Gln |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Arg | Met | Glu | Gln | Glu | Thr | Gln | Arg | Lys | Leu | Glu | Gln | Leu | Arg | Ala | Glu |
| | 435 | | | | | | 440 | | | | | 445 | | | |
| Leu | Asp | Glu | Met | Tyr | Gly | Gln | Gln | Ile | Val | Gln | Met | Lys | Gln | Glu | Leu |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Ile | Arg | Gln | His | Met | Ala | Gln | Met | Glu | Glu | Met | Lys | Thr | Arg | His | Lys |
| 465 | | | | 470 | | | | | | 475 | | | | | 480 |
| Gly | Glu | Met | Glu | Asn | Ala | Leu | Arg | Ser | Tyr | Ser | Asn | Ile | Thr | Val | Asn |
| | | | 485 | | | | | | 490 | | | | | 495 | |
| Glu | Asp | Gln | Ile | Lys | Leu | Met | Asn | Val | Ala | Ile | Asn | Glu | Leu | Asn | Ile |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Lys | Leu | Gln | Asp | Thr | Asn | Ser | Gln | Lys | Glu | Lys | Leu | Lys | Glu | Glu | Leu |
| | 515 | | | | | | 520 | | | | | 525 | | | |
| Gly | Leu | Ile | Leu | Glu | Glu | Lys | Cys | Ala | Leu | Gln | Arg | Gln | Leu | Glu | Asp |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Leu | Val | Glu | Glu | Leu | Ser | Phe | Ser | Arg | Glu | Gln | Ile | Gln | Arg | Ala | Arg |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Gln | Thr | Ile | Ala | Glu | Gln | Glu | Ser | Lys | Leu | Asn | Glu | Ala | His | Lys | Ser |
| | | | 565 | | | | | | 570 | | | | | 575 | |
| Leu | Ser | Thr | Val | Glu | Asp | Leu | Lys | Ala | Glu | Ile | Val | Ser | Ala | Ser | Glu |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ser | Arg | Lys | Glu | Leu | Glu | Leu | Lys | His | Glu | Ala | Glu | Val | Thr | Asn | Tyr |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Lys | Ile | Lys | Leu | Glu | Met | Leu | Glu | Lys | Glu | Lys | Asn | Ala | Val | Leu | Asp |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Arg | Met | Ala | Glu | Ser | Gln | Glu | Ala | Glu | Leu | Glu | Arg | Leu | Arg | Thr | Gln |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Leu | Leu | Phe | Ser | His | Glu | Glu | Glu | Leu | Ser | Lys | Leu | Lys | Glu | Asp | Leu |
| | | | 645 | | | | | | 650 | | | | | 655 | |
| Glu | Ile | Glu | His | Arg | Ile | Asn | Ile | Glu | Lys | Leu | Lys | Asp | Asn | Leu | Gly |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Ile | His | Tyr | Lys | Gln | Gln | Ile | Asp | Gly | Leu | Gln | Asn | Glu | Met | Ser | Gln |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Lys | Ile | Glu | Thr | Met | Gln | Phe | Glu | Lys | Asp | Asn | Leu | Ile | Thr | Lys | Gln |
| | 690 | | | | | 695 | | | | | 700 | | | | |
| Asn | Gln | Leu | Ile | Leu | Glu | Ile | Ser | Lys | Leu | Lys | Asp | Leu | Gln | Gln | Ser |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
| Leu | Val | Asn | Ser | Lys | Ser | Glu | Glu | Met | Thr | Leu | Gln | Ile | Asn | Glu | Leu |
| | | | 725 | | | | | | 730 | | | | | 735 | |
| Gln | Lys | Glu | Ile | Glu | Ile | Leu | Arg | Gln | Glu | Glu | Lys | Glu | Lys | Gly | Thr |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Leu | Glu | Gln | Glu | Val | Gln | Glu | Leu | Gln | Leu | Lys | Thr | Glu | Leu | Leu | Glu |
| | 755 | | | | | | 760 | | | | | 765 | | | |
| Lys | Gln | Met | Lys | Glu | Lys | Glu | Asn | Asp | Leu | Gln | Glu | Lys | Phe | Ala | Gln |
| | 770 | | | | | 775 | | | | | 780 | | | | |
| Leu | Glu | Ala | Glu | Asn | Ser | Ile | Leu | Lys | Asp | Glu | Lys | Lys | Thr | Leu | Glu |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Asp | Met | Leu | Lys | Ile | His | Thr | Pro | Val | Ser | Gln | Glu | Glu | Arg | Leu | Ile |
| | | | | 805 | | | | | 810 | | | | | 815 | |

| | | | | | | | | | | | | | | | | |
|------|------|-----|------|-----|------|------|------|------|------|------|------|------|------|------|------|--|
| Phe | Leu | Asp | Ser | Ile | Lys | Ser | Lys | Ser | Lys | Asp | Ser | Val | Trp | Glu | Lys | |
| | | | 820 | | | | | | 825 | | | | 830 | | | |
| Glu | Ile | Glu | Ile | Leu | Ile | Glu | Glu | Asn | Glu | Asp | Leu | Lys | Gln | Gln | Cys | |
| | | 835 | | | | | 840 | | | | | 845 | | | | |
| Ile | Gln | Leu | Asn | Glu | Glu | Ile | Glu | Lys | Gln | Arg | Asn | Thr | Phe | Ser | Phe | |
| | 850 | | | | | 855 | | | | | 860 | | | | | |
| Ala | Glu | Lys | Asn | Phe | Glu | Val | Asn | Tyr | Gln | Glu | Leu | Gln | Glu | Glu | Tyr | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | |
| Ala | Cys | Leu | Leu | Lys | Val | Lys | Asp | Asp | Leu | Glu | Asp | Ser | Lys | Asn | Lys | |
| | | | 885 | | | | | | 890 | | | | | 895 | | |
| Gln | Glu | Leu | Glu | Tyr | Lys | Ser | Lys | Leu | Lys | Ala | Leu | Asn | Glu | Glu | Leu | |
| | | | 900 | | | | | 905 | | | | | 910 | | | |
| His | Leu | Gln | Arg | Ile | Asn | Pro | Thr | Thr | Val | Lys | Met | Lys | Ser | Ser | Val | |
| | | 915 | | | | | 920 | | | | | 925 | | | | |
| Phe | Asp | Glu | Asp | Lys | Thr | Phe | Val | Ala | Glu | Thr | Leu | Glu | Met | Gly | Glu | |
| | 930 | | | | | 935 | | | | | 940 | | | | | |
| Val | Val | Glu | Lys | Asp | Thr | Thr | Glu | Leu | Met | Glu | Lys | Leu | Glu | Val | Thr | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | |
| Lys | Arg | Glu | Lys | Leu | Glu | Leu | Ser | Gln | Arg | Leu | Ser | Asp | Leu | Ser | Glu | |
| | | | 965 | | | | | | 970 | | | | | 975 | | |
| Gln | Leu | Lys | Gln | Lys | His | Gly | Glu | Ile | Ser | Phe | Leu | Asn | Glu | Glu | Val | |
| | | | 980 | | | | | 985 | | | | | 990 | | | |
| Lys | Ser | Leu | Lys | Gln | Glu | Lys | Glu | Gln | Val | Ser | Leu | Arg | Cys | Arg | Glu | |
| | 995 | | | | | | 1000 | | | | | 1005 | | | | |
| Leu | Glu | Ile | Ile | Ile | Asn | His | Asn | Arg | Ala | Glu | Asn | Val | Gln | Ser | Cys | |
| | 1010 | | | | 1015 | | | | | | 1020 | | | | | |
| Asp | Thr | Gln | Val | Ser | Ser | Leu | Leu | Asp | Gly | Val | Val | Thr | Met | Thr | Ser | |
| 1025 | | | | | 1030 | | | | | 1035 | | | | | 1040 | |
| Arg | Gly | Ala | Glu | Gly | Ser | Val | Ser | Lys | Val | Asn | Lys | Ser | Phe | Gly | Glu | |
| | | | 1045 | | | | | | 1050 | | | | | 1055 | | |
| Glu | Ser | Lys | Ile | Met | Val | Glu | Asp | Lys | Val | Ser | Phe | Glu | Asn | Met | Thr | |
| | | | 1060 | | | | | 1065 | | | | | 1070 | | | |
| Val | Gly | Glu | Glu | Ser | Lys | Gln | Glu | Gln | Leu | Ile | Leu | Asp | His | Leu | Pro | |
| | 1075 | | | | | | 1080 | | | | | 1085 | | | | |
| Ser | Val | Thr | Lys | Glu | Ser | Ser | Leu | Arg | Ala | Thr | Gln | Pro | Ser | Glu | Asn | |
| | 1090 | | | | | 1095 | | | | | 1100 | | | | | |
| Asp | Lys | Leu | Gln | Lys | Glu | Leu | Asn | Val | Leu | Lys | Ser | Glu | Gln | Asn | Asp | |
| 1105 | | | | | 1110 | | | | | 1115 | | | | | 1120 | |
| Leu | Arg | Leu | Gln | Met | Glu | Ala | Gln | Arg | Ile | Cys | Leu | Ser | Leu | Val | Tyr | |
| | | | 1125 | | | | | | 1130 | | | | | 1135 | | |
| Ser | Thr | His | Val | Asp | Gln | Val | Arg | Glu | Tyr | Met | Glu | Asn | Glu | Lys | Asp | |
| | | | 1140 | | | | | 1145 | | | | | 1150 | | | |
| Lys | Ala | Leu | Cys | Ser | Leu | Lys | Glu | Glu | Leu | Ile | Phe | Ala | Gln | Glu | Glu | |
| | 1155 | | | | | | 1160 | | | | | 1165 | | | | |
| Lys | Ile | Lys | Glu | Leu | Gln | Lys | Ile | His | Gln | Leu | Glu | Leu | Gln | Thr | Met | |
| | 1170 | | | | | 1175 | | | | | 1180 | | | | | |
| Lys | Thr | Gln | Glu | Thr | Gly | Asp | Glu | Gly | Lys | Pro | Leu | His | Leu | Leu | Ile | |
| 1185 | | | | | 1190 | | | | | 1195 | | | | | 1200 | |
| Gly | Lys | Leu | Gln | Lys | Ala | Val | Ser | Glu | Glu | Cys | Ser | Tyr | Phe | Leu | Gln | |
| | | | 1205 | | | | | 1210 | | | | | | 1215 | | |
| Thr | Leu | Cys | Ser | Val | Leu | Gly | Glu | Tyr | Thr | Pro | Ala | Leu | Lys | Cys | | |
| | | | 1220 | | | | | 1225 | | | | | 1230 | | | |
| Glu | Val | Asn | Ala | Glu | Asp | Lys | Glu | Asn | Ser | Gly | Asp | Tyr | Ile | Ser | Glu | |
| | 1235 | | | | | | 1240 | | | | | 1245 | | | | |
| Asn | Glu | Asp | Pro | Glu | Leu | Gln | Asp | Tyr | Arg | Tyr | Glu | Val | Gln | Asp | Phe | |
| | 1250 | | | | | 1255 | | | | | 1260 | | | | | |
| Gln | Glu | Asn | Met | His | Thr | Leu | Leu | Asn | Lys | Val | Thr | Glu | Glu | Tyr | Asn | |
| 1265 | | | | | 1270 | | | | | 1275 | | | | | 1280 | |
| Lys | Leu | Leu | Val | Leu | Gln | Thr | Arg | Leu | Ser | Lys | Ile | Trp | Gly | Gln | Gln | |
| | | | 1285 | | | | | 1290 | | | | | | 1295 | | |
| Thr | Asp | Gly | Met | Lys | Leu | Glu | Phe | Gly | Glu | Glu | Asn | Leu | Pro | Lys | Glu | |
| | | | 1300 | | | | | 1305 | | | | | 1310 | | | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Glu | Thr | Glu | Phe | Leu | Ser | Ile | His | Ser | Gln | Met | Thr | Asn | Leu | Glu | Asp | 1315 | 1320 | 1325 |
| Ile | Asp | Val | Asn | His | Lys | Ser | Lys | Leu | Ser | Ser | Leu | Gln | Asp | Leu | Glu | 1330 | 1335 | 1340 |
| Lys | Thr | Lys | Leu | Glu | Glu | Gln | Val | Gln | Glu | Leu | Glu | Ser | Leu | Ile | Ser | 1345 | 1350 | 1355 |
| Ser | Leu | Gln | Gln | Gln | Leu | Lys | Glu | Thr | Glu | Gln | Asn | Tyr | Glu | Ala | Glu | 1365 | 1370 | 1375 |
| Ile | His | Cys | Leu | Gln | Lys | Arg | Leu | Gln | Ala | Val | Ser | Glu | Ser | Thr | Val | 1380 | 1385 | 1390 |
| Pro | Pro | Ser | Leu | Pro | Val | Asp | Ser | Val | Val | Ile | Thr | Glu | Ser | Asp | Ala | 1395 | 1400 | 1405 |
| Gln | Arg | Thr | Met | Tyr | Pro | Gly | Ser | Cys | Val | Lys | Lys | Asn | Ile | Asp | Gly | 1410 | 1415 | 1420 |
| Thr | Ile | Glu | Phe | Ser | Gly | Glu | Phe | Gly | Val | Lys | Glu | Glu | Thr | Asn | Ile | 1425 | 1430 | 1435 |
| Val | Lys | Leu | Leu | Glu | Lys | Gln | Tyr | Gln | Glu | Gln | Leu | Glu | Glu | Glu | Val | 1445 | 1450 | 1455 |
| Ala | Lys | Val | Ile | Val | Ser | Met | Ser | Ile | Ala | Phe | Ala | Gln | Gln | Thr | Glu | 1460 | 1465 | 1470 |
| Leu | Ser | Arg | Ile | Ser | Gly | Gly | Lys | Glu | Asn | Thr | Ala | Ser | Ser | Lys | Gln | 1475 | 1480 | 1485 |
| Ala | His | Ala | Val | Cys | Gln | Gln | Glu | Gln | His | Tyr | Phe | Asn | Glu | Met | Lys | 1490 | 1495 | 1500 |
| Leu | Ser | Gln | Asp | Gln | Ile | Gly | Phe | Gln | Thr | Phe | Glu | Thr | Val | Asp | Val | 1505 | 1510 | 1515 |
| Lys | Phe | Lys | Glu | Glu | Phe | Lys | Pro | Leu | Ser | Lys | Glu | Leu | Gly | Glu | His | 1525 | 1530 | 1535 |
| Gly | Lys | Glu | Ile | Leu | Leu | Ser | Asn | Ser | Asp | Pro | His | Asp | Ile | Pro | Glu | 1540 | 1545 | 1550 |
| Ser | Lys | Asp | Cys | Val | Leu | Thr | Ile | Ser | Glu | Glu | Met | Phe | Ser | Lys | Asp | 1555 | 1560 | 1565 |
| Lys | Thr | Phe | Ile | Val | Arg | Gln | Ser | Ile | His | Asp | Glu | Ile | Ser | Val | Ser | 1570 | 1575 | 1580 |
| Ser | Met | Asp | Ala | Ser | Arg | Gln | Leu | Met | Leu | Asn | Glu | Glu | Gln | Leu | Glu | 1585 | 1590 | 1595 |
| Asp | Met | Arg | Gln | Glu | Leu | Val | Arg | Gln | Tyr | Gln | Glu | His | Gln | Gln | Ala | 1605 | 1610 | 1615 |
| Thr | Gln | Arg | Ser | Ser | Ile | Asp | Asn | Glu | Asn | Leu | Val | Ser | Glu | Arg | Glu | 1620 | 1625 | 1630 |
| Arg | Val | Leu | Leu | Glu | Glu | Leu | Glu | Ala | Leu | Lys | Gln | Leu | Ser | Leu | Ala | 1635 | 1640 | 1645 |
| Gly | Arg | Glu | Lys | Leu | Cys | Cys | Glu | Leu | Arg | Asn | Ser | Ser | Thr | Gln | Thr | 1650 | 1655 | 1660 |
| Gln | Asn | Gly | Asn | Glu | Asn | Gln | Gly | Glu | Val | Glu | Gln | Thr | Phe | Lys | | 1665 | 1670 | 1675 |
| Glu | Lys | Glu | Leu | Asp | Arg | Lys | Pro | Glu | Asp | Val | Pro | Pro | Glu | Ile | Leu | 1685 | 1690 | 1695 |
| Ser | Asn | Glu | Arg | Tyr | Ala | Leu | Gln | Lys | Ala | Asn | Asn | Arg | Leu | Leu | Lys | 1700 | 1705 | 1710 |
| Ile | Leu | Leu | Glu | Val | Val | Lys | Thr | Thr | Ala | Ala | Val | Glu | Glu | Thr | Ile | 1715 | 1720 | 1725 |
| Gly | Arg | His | Val | Leu | Gly | Ile | Leu | Asp | Arg | Ser | Ser | Lys | Ser | Gln | Ser | 1730 | 1735 | 1740 |
| Ser | Ala | Ser | Leu | Ile | Trp | Arg | Ser | Glu | Ala | Glu | Ala | Ser | Val | Lys | Ser | 1745 | 1750 | 1755 |
| Cys | Val | His | Glu | Glu | His | Thr | Arg | Val | Thr | Asp | Glu | Ser | Ile | Pro | Ser | 1765 | 1770 | 1775 |
| Tyr | Ser | Gly | Ser | Asp | Met | Pro | Arg | Asn | Asp | Ile | Asn | Met | Trp | Ser | Lys | 1780 | 1785 | 1790 |
| Val | Thr | Glu | Glu | Gly | Thr | Glu | Leu | Ser | Gln | Arg | Leu | Val | Arg | Ser | Gly | 1795 | 1800 | 1805 |

| | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Phe | Ala | Gly | Thr | Glu | Ile | Asp | Pro | Glu | Asn | Glu | Glu | Leu | Met | Leu | Asn |
| 1810 | | | | | | 1815 | | | | | | 1820 | | | |
| Ile | Ser | Ser | Arg | Leu | Gln | Ala | Ala | Val | Glu | Lys | Leu | Leu | Glu | Ala | Ile |
| 1825 | | | | | 1830 | | | | | 1835 | | | | | 1840 |
| Ser | Glu | Thr | Ser | Ser | Gln | Leu | Glu | His | Ala | Lys | Val | Thr | Gln | Thr | Glu |
| | | | | 1845 | | | | | 1850 | | | | | 1855 | |
| Leu | Met | Arg | Glu | Ser | Phe | Arg | Gln | Lys | Gln | Glu | Ala | Thr | Glu | Ser | Leu |
| | | | 1860 | | | | | 1865 | | | | | 1870 | | |
| Lys | Cys | Gln | Glu | Glu | Leu | Arg | Glu | Arg | Leu | His | Glu | Glu | Ser | Arg | Ala |
| | | 1875 | | | | | 1880 | | | | | | 1885 | | |
| Arg | Glu | Gln | Leu | Ala | Val | Glu | Leu | Ser | Lys | Ala | Glu | Gly | Val | Ile | Asp |
| | | 1890 | | | | 1895 | | | | | 1900 | | | | |
| Gly | Tyr | Ala | Asp | Glu | Lys | Thr | Leu | Phe | Glu | Arg | Gln | Ile | Gln | Glu | Lys |
| 1905 | | | | | 1910 | | | | | 1915 | | | | | 1920 |
| Thr | Asp | Ile | Ile | Asp | Arg | Leu | Glu | Gln | Glu | Leu | Leu | Cys | Ala | Ser | Asn |
| | | | | 1925 | | | | | 1930 | | | | | 1935 | |
| Arg | Leu | Gln | Glu | Leu | Glu | Ala | Glu | Gln | Gln | Gln | Ile | Gln | Glu | Glu | Arg |
| | | | 1940 | | | | 1945 | | | | | | 1950 | | |
| Glu | Leu | Leu | Ser | Arg | Gln | Lys | Glu | Ala | Met | Lys | Ala | Glu | Ala | Gly | Pro |
| | | 1955 | | | | 1960 | | | | | | 1965 | | | |
| Val | Glu | Gln | Gln | Leu | Leu | Gln | Glu | Thr | Glu | Lys | Leu | Met | Lys | Glu | Lys |
| | 1970 | | | | | 1975 | | | | | 1980 | | | | |
| Leu | Glu | Val | Gln | Cys | Gln | Ala | Glu | Lys | Val | Arg | Asp | Asp | Leu | Gln | Lys |
| 1985 | | | | | 1990 | | | | | 1995 | | | | | 2000 |
| Gln | Val | Lys | Ala | Leu | Glu | Ile | Asp | Val | Glu | Glu | Gln | Val | Ser | Arg | Phe |
| | | | 2005 | | | | | 2010 | | | | | | 2015 | |
| Ile | Glu | Leu | Glu | Gln | Glu | Lys | Asn | Thr | Glu | Leu | Met | Asp | Leu | Arg | Gln |
| | | 2020 | | | | | | 2025 | | | | | 2030 | | |
| Gln | Asn | Gln | Ala | Leu | Glu | Lys | Gln | Leu | Glu | Lys | Met | Arg | Lys | Phe | Leu |
| | | 2035 | | | | | 2040 | | | | | 2045 | | | |
| Asp | Glu | Gln | Ala | Ile | Asp | Arg | Glu | His | Glu | Arg | Asp | Val | Phe | Gln | Gln |
| | 2050 | | | | 2055 | | | | | | 2060 | | | | |
| Glu | Ile | Gln | Lys | Leu | Glu | Gln | Gln | Leu | Lys | Val | Val | Pro | Arg | Phe | Gln |
| 2065 | | | | | 2070 | | | | | 2075 | | | | | 2080 |
| Pro | Ile | Ser | Glu | His | Gln | Thr | Arg | Glu | Val | Glu | Gln | Leu | Ala | Asn | His |
| | | | | 2085 | | | | 2090 | | | | | | 2095 | |
| Leu | Lys | Glu | Lys | Thr | Asp | Lys | Cys | Ser | Glu | Leu | Leu | Leu | Ser | Lys | Glu |
| | | 2100 | | | | | 2105 | | | | | | 2110 | | |
| Gln | Leu | Gln | Arg | Asp | Ile | Gln | Glu | Arg | Asn | Glu | Glu | Ile | Glu | Lys | Leu |
| | | 2115 | | | | 2120 | | | | | | 2125 | | | |
| Glu | Phe | Arg | Val | Arg | Glu | Leu | Glu | Gln | Ala | Leu | Leu | Val | Ser | Ala | Asp |
| | 2130 | | | | 2135 | | | | | | 2140 | | | | |
| Thr | Phe | Gln | Lys | Val | Glu | Asp | Arg | Lys | His | Phe | Gly | Ala | Val | Glu | Ala |
| 2145 | | | | | 2150 | | | | | 2155 | | | | | 2160 |
| Lys | Pro | Glu | Leu | Ser | Leu | Glu | Val | Gln | Leu | Gln | Ala | Glu | Arg | Asp | Ala |
| | | | | 2165 | | | | 2170 | | | | | | 2175 | |
| Ile | Asp | Arg | Lys | Glu | Lys | Glu | Ile | Thr | Asn | Leu | Glu | Glu | Gln | Leu | Glu |
| | | | 2180 | | | | | 2185 | | | | | 2190 | | |
| Gln | Phe | Arg | Glu | Glu | Leu | Glu | Asn | Lys | Asn | Glu | Glu | Val | Gln | Gln | Leu |
| | | 2195 | | | | | 2200 | | | | | 2205 | | | |
| His | Met | Gln | Leu | Glu | Ile | Gln | Lys | Lys | Glu | Ser | Thr | Thr | Arg | Leu | Gln |
| | 2210 | | | | | 2215 | | | | | 2220 | | | | |
| Glu | Leu | Glu | Gln | Glu | Asn | Lys | Leu | Phe | Lys | Asp | Asp | Met | Glu | Lys | Leu |
| 2225 | | | | | 2230 | | | | | 2235 | | | | | 2240 |
| Gly | Leu | Ala | Ile | Lys | Glu | Ser | Asp | Ala | Met | Ser | Thr | Gln | Asp | Gln | His |
| | | | | 2245 | | | | 2250 | | | | | | 2255 | |
| Val | Leu | Phe | Gly | Lys | Phe | Ala | Gln | Ile | Ile | Gln | Glu | Lys | Glu | Val | Glu |
| | | | 2260 | | | | | 2265 | | | | | 2270 | | |
| Ile | Asp | Gln | Leu | Asn | Glu | Gln | Val | Thr | Lys | Leu | Gln | Gln | Gln | Leu | Lys |
| | | 2275 | | | | | 2280 | | | | | 2285 | | | |
| Ile | Thr | Thr | Asp | Asn | Lys | Val | Ile | Glu | Glu | Lys | Asn | Glu | Leu | Ile | Arg |
| | 2290 | | | | | 2295 | | | | | 2300 | | | | |

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Asp | Leu | Glu | Thr | Gln | Ile | Glu | Cys | Leu | Met | Ser | Asp | Gln | Glu | Cys | Val | 2305 | 2310 | 2315 | 2320 |
| Lys | Arg | Asn | Arg | Glu | Glu | Glu | Ile | Glu | Gln | Leu | Asn | Glu | Val | Ile | Glu | | 2325 | 2330 | 2335 |
| Lys | Leu | Gln | Gln | Glu | Leu | Ala | Asn | Ile | Gly | Gln | Lys | Thr | Ser | Met | Asn | 2340 | 2345 | | 2350 |
| Ala | His | Ser | Leu | Ser | Glu | Glu | Ala | Asp | Ser | Leu | Lys | His | Gln | Leu | Asp | 2355 | 2360 | | 2365 |
| Val | Val | Ile | Ala | Glu | Lys | Leu | Ala | Leu | Glu | Gln | Gln | Val | Glu | Thr | Ala | 2370 | 2375 | | 2380 |
| Asn | Glu | Glu | Met | Thr | Phe | Met | Lys | Asn | Val | Leu | Lys | Glu | Thr | Asn | Phe | 2385 | 2390 | | 2395 |
| Lys | Met | Asn | Gln | Leu | Thr | Gln | Glu | Leu | Phe | Ser | Leu | Lys | Arg | Glu | Arg | 2405 | 2410 | | 2415 |
| Glu | Ser | Val | Glu | Lys | Ile | Gln | Ser | Ile | Pro | Glu | Asn | Ser | Val | Asn | Val | 2420 | 2425 | | 2430 |
| Ala | Ile | Asp | His | Leu | Ser | Lys | Asp | Lys | Pro | Glu | Leu | Glu | Val | Val | Leu | 2435 | 2440 | | 2445 |
| Thr | Glu | Asp | Ala | Leu | Lys | Ser | Leu | Glu | Asn | Gln | Thr | Tyr | Phe | Lys | Ser | 2450 | 2455 | | 2460 |
| Phe | Glu | Glu | Asn | Gly | Lys | Gly | Ser | Ile | Ile | Asn | Leu | Glu | Thr | Arg | Leu | 2465 | 2470 | | 2475 |
| Leu | Gln | Leu | Glu | Ser | Thr | Val | Ser | Ala | Lys | Asp | Leu | Glu | Leu | Thr | Gln | 2485 | 2490 | | 2495 |
| Cys | Tyr | Lys | Gln | Ile | Lys | Asp | Met | Gln | Glu | Gln | Gly | Gln | Phe | Glu | Thr | 2500 | 2505 | | 2510 |
| Glu | Met | Leu | Gln | Lys | Lys | Ile | Val | Asn | Leu | Gln | Lys | Ile | Val | Glu | Glu | 2515 | 2520 | | 2525 |
| Lys | Val | Ala | Ala | Ala | Leu | Val | Ser | Gln | Ile | Gln | Leu | Glu | Ala | Val | Gln | 2530 | 2535 | | 2540 |
| Glu | Tyr | Ala | Lys | Phe | Cys | Gln | Asp | Asn | Gln | Thr | Ile | Ser | Ser | Glu | Pro | 2545 | 2550 | | 2555 |
| Glu | Arg | Thr | Asn | Ile | Gln | Asn | Leu | Asn | Gln | Leu | Arg | Glu | Asp | Glu | Leu | 2565 | 2570 | | 2575 |
| Gly | Ser | Asp | Ile | Ser | Ala | Leu | Thr | Leu | Arg | Ile | Ser | Glu | Leu | Glu | Ser | 2580 | 2585 | | 2590 |
| Gln | Val | Val | Glu | Met | His | Thr | Ser | Leu | Ile | Leu | Glu | Lys | Glu | Gln | Val | 2595 | 2600 | | 2605 |
| Glu | Ile | Ala | Glu | Lys | Asn | Val | Leu | Glu | Lys | Glu | Lys | Lys | Leu | Leu | Glu | 2610 | 2615 | | 2620 |
| Leu | Gln | Lys | Leu | Leu | Glu | Gly | Asn | Glu | Lys | Lys | Gln | Arg | Glu | Lys | Glu | 2625 | 2630 | | 2635 |
| Lys | Lys | Arg | Ser | Pro | Gln | Asp | Val | Glu | Val | Leu | Lys | Thr | Thr | Thr | Glu | 2645 | 2650 | | 2655 |
| Leu | Phe | His | Ser | Asn | Glu | Glu | Ser | Gly | Phe | Phe | Asn | Glu | Leu | Glu | Ala | 2660 | 2665 | | 2670 |
| Leu | Arg | Ala | Glu | Ser | Val | Ala | Thr | Lys | Ala | Glu | Leu | Ala | Ser | Tyr | Lys | 2675 | 2680 | | 2685 |
| Glu | Lys | Ala | Glu | Lys | Leu | Gln | Glu | Glu | Leu | Leu | Val | Lys | Glu | Thr | Asn | 2690 | 2695 | | 2700 |
| Met | Thr | Ser | Leu | Gln | Lys | Asp | Leu | Ser | Gln | Val | Arg | Asp | His | Leu | Ala | 2705 | 2710 | | 2715 |
| Glu | Ala | Lys | Glu | Lys | Leu | Ser | Ile | Leu | Glu | Lys | Glu | Asp | Glu | Thr | Glu | 2725 | 2730 | | 2735 |
| Val | Gln | Glu | Ser | Lys | Lys | Ala | Cys | Met | Phe | Glu | Pro | Leu | Pro | Ile | Lys | 2740 | 2745 | | 2750 |
| Leu | Ser | Lys | Ser | Ile | Ala | Ser | Gln | Thr | Asp | Gly | Thr | Leu | Lys | Ile | Ser | 2755 | 2760 | | 2765 |
| Ser | Ser | Asn | Gln | Thr | Pro | Gln | Ile | Leu | Val | Lys | Asn | Ala | Gly | Ile | Gln | 2770 | 2775 | | 2780 |
| Ile | Asn | Leu | Gln | Ser | Glu | Cys | Ser | Ser | Glu | Glu | Val | Thr | Glu | Ile | Ile | 2785 | 2790 | | 2795 |
| | | | | | | | | | | | | | | | | | | | 2800 |

Ser Gln Phe Thr Glu Lys Ile Glu Lys Met Gln Glu Leu His Ala Ala
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 Glu Ile Leu Asp Met Glu Ser Arg His Ile Ser Glu Thr Glu Thr Leu
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 Lys Arg Glu His Tyr Val Ala Val Gln Leu Leu Lys Glu Glu Cys Gly
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 Thr Leu Lys Ala Val Ile Gln Cys Leu Arg Ser Lys Glu Val Phe Gly
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 Gln Gln Val Ser Glu Pro Trp Leu Glu Glu Arg Lys Ala Tyr Ile Asn
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 Gln His Lys His Leu Lys Glu Leu Glu Ala Phe Arg Leu Glu Val Lys
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 Asp Lys Thr Asp Glu Val His Leu Leu Asn Asp Thr Leu Ala Ser Glu
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 Gln Lys Lys Ser Arg Glu Leu Gln Trp Ala Leu Glu Lys Glu Lys Ala
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Leu Gln Ser Ser Asp Gly Thr Gly Gln Ser Arg Pro Pro Leu Pro Ser
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 Glu Asp Leu Leu Lys Glu Leu Gln Lys Gln Leu Glu Glu Lys His Ser
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 Gly Ala Glu Lys Thr Asp Ser Phe Tyr His Ser Ser Gly Gly Leu Glu
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Leu Tyr Gly Glu Pro Arg His Thr Thr Tyr Arg Ser Arg Ser Asp Leu
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 35 40 45
 Leu Arg Gln Gln Asn Gln Ala Leu Glu Lys Gln Leu Glu Lys Met Arg
 50 55 60
 Lys Met Asp Leu Arg Gln Gln Asn Gln Ala Leu Glu Lys Gln Leu Glu
 65 70 75 80
 Lys Met Arg Lys Phe Leu Asp Glu Gln Ala Ile Asp Arg Glu His Glu
 85 90 95
 Arg Asp Val Phe Gln Gln Glu Ile Gln Lys Leu Glu Gln Gln Leu Lys
 100 105 110
 Leu Val Pro Arg Phe Gln Pro Ile Ser Glu His Gln Thr Arg Glu Val
 115 120 125
 Glu Gln Leu Thr Asn His Leu Lys Glu Lys Thr Asp Lys Cys Ser Glu
 130 135 140
 Leu Leu Leu Ser Lys Glu Gln Leu Gln Arg Asp Val Gln Glu Arg Asn
 145 150 155 160
 Glu Glu Ile Glu Lys Leu Glu Cys Arg Val Arg Glu Leu Glu Gln Ala
 165 170 175
 Leu Leu Ser Val Gln Thr Leu Ser Lys Arg Trp Arg Thr Arg Asn Ser
 180 185 190
 Phe Gly Ala Val Glu Pro Lys Ala Glu Leu Cys Leu Glu Val Gln Leu
 195 200 205
 Gln Ala Glu Arg Asp Ala Ile Asp Arg Lys Glu Lys Glu Ile Thr Asn
 210 215 220
 Leu Glu Glu Gln Leu Glu Gln Phe Arg Glu Glu Leu Glu Asn Lys Asn
 225 230 235 240
 Glu Glu Val Gln Gln Leu His Met Gln Leu Glu Ile Gln Lys Lys Glu
 245 250 255
 Ser Thr Thr Arg Leu Gln Glu Leu Glu Gln Glu Asn Lys Leu Phe Lys
 260 265 270
 Asp Glu Met Glu Lys Leu Gly Phe Ala Ile Lys Glu Ser Asp Ala Val
 275 280 285
 Ser Pro Gln Asp Gln Gln Val Leu Phe Gly Lys Phe Ala Gln Ile Ile
 290 295 300
 His Glu Lys Glu Val Glu Ile Asp Arg Leu Asn Glu Gln Ile Ile Lys
 305 310 315 320
 Leu Gln Gln Gln Leu Lys Ile Thr Thr Asp Asn Lys Val Ile Glu Glu
 325 330 335
 Lys Asn Glu Leu Ile Arg Asp Leu Glu Ala Gln Ile Glu Cys Leu Met

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 340 | | | | | 345 | | | | 350 | | | |
| Ser | Asp | Gln | Glu | Arg | Val | Arg | Lys | Asn | Arg | Glu | Glu | Glu | Ile | Glu | Gln |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Leu | Asn | Glu | Val | Ile | Glu | Lys | Leu | Gln | Gln | Glu | Leu | Ala | Asn | Ile | Asp |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Gln | Lys | Thr | Ser | Val | Asp | Pro | Ser | Ser | Leu | Ser | Glu | Glu | Ala | Asp | Ser |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Leu | Lys | His | Gln | Leu | Asp | Lys | Val | Ile | Ala | Glu | Lys | Leu | Ala | Leu | Glu |
| | | | | 405 | | | | | 410 | | | | | | 415 |
| His | Gln | Val | Glu | Thr | Thr | Asn | Glu | Glu | Met | Ala | Val | Thr | Lys | Asn | Val |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Leu | Lys | Glu | Thr | Asn | Phe | Lys | Met | Asn | Gln | Leu | Thr | Gln | Glu | Leu | Cys |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Ser | Leu | Lys | Arg | Glu | Arg | Glu | Lys | Met | Glu | Arg | Ile | Gln | Ser | Val | Pro |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Glu | Lys | Ser | Val | Asn | Met | Ser | Val | Gly | Asp | Leu | Ser | Lys | Asp | Lys | Pro |
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| Glu | Met | Asp | Leu | Ile | Pro | Thr | Glu | Asp | Ala | Leu | Ala | Gln | Leu | Glu | Thr |
| | | | | 485 | | | | 490 | | | | | | 495 | |
| Gln | Thr | Gln | Leu | Arg | Ser | Ser | Glu | Glu | Ser | Ser | Lys | Val | Ser | Leu | Ser |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Ser | Leu | Glu | Thr | Lys | Leu | Leu | Gln | Leu | Glu | Ser | Thr | Val | Ser | Thr | Lys |
| | | 515 | | | | | 520 | | | | | 525 | | | |
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| Gln | Gly | Arg | Ser | Glu | Thr | Glu | Met | Leu | Gln | Thr | Lys | Ile | Val | Ser | Leu |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Gln | Lys | Val | Leu | Glu | Lys | Val | Ala | Ala | Ala | Leu | Val | Ser | Gln | Val | |
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| Gln | Leu | Glu | Ala | Val | Gln | Glu | Tyr | Val | Lys | Leu | Cys | Ala | Asp | Lys | Pro |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ala | Val | Ser | Ser | Asp | Pro | Ala | Arg | Thr | Glu | Val | Pro | Gly | Leu | Ser | Gln |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Leu | Ala | Gly | Asn | Thr | Met | Glu | Ser | Asp | Val | Ser | Ala | Leu | Thr | Trp | Arg |
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| Ile | Ser | Glu | Leu | Glu | Ser | Gln | Leu | Val | Glu | Met | His | Ser | Ser | Leu | Ile |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Ser | Glu | Lys | Glu | Gln | Val | Glu | Ile | Ala | Glu | Lys | Asn | Ala | Leu | Glu | Lys |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Glu | Lys | Lys | Leu | Gln | Glu | Leu | Gln | Lys | Leu | Val | Gln | Asp | Ser | Glu | Thr |
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| Lys | Gln | Arg | Glu | Arg | Glu | Arg | Gln | Ser | Arg | Leu | His | Gly | Asp | Leu | Gly |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Val | Leu | Glu | Ser | Thr | Thr | Ser | Glu | Glu | Ser | Gly | Val | Phe | Gly | Glu | Leu |
| | 690 | | | | | 695 | | | | | 700 | | | | |
| Glu | Ala | Leu | Arg | Ala | Glu | Ser | Ala | Ala | Pro | Lys | Gly | Glu | Leu | Ala | Asn |
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| Tyr | Lys | Glu | Leu | Ala | Glu | Lys | Leu | Gln | Glu | Glu | Leu | Leu | Val | Lys | Glu |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Thr | Asn | Met | Ala | Ser | Leu | Pro | Lys | Glu | Leu | Ser | His | Val | Arg | Asp | Gln |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Leu | Thr | Glu | Ala | Glu | Asp | Lys | Leu | Ser | His | Phe | Ser | Glu | Lys | Glu | Asp |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Lys | Thr | Glu | Val | Gln | Glu | His | Gly | Thr | Ile | Cys | Ile | Leu | Glu | Pro | Cys |
| | 770 | | | | | 775 | | | | | 780 | | | | |
| Pro | Gly | Gln | Ile | Gly | Glu | Ser | Phe | Ala | Ser | Gln | Thr | Glu | Gly | Ala | Val |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Gln | Val | Asn | Ser | His | Thr | Gln | Thr | Pro | Gln | Ile | Pro | Val | Arg | Ser | Val |
| | | | | 805 | | | | | 810 | | | | | 815 | |
| Gly | Ile | Gln | Thr | His | Ser | Gln | Ser | Asp | Ser | Ser | Pro | Glu | Glu | Val | Ala |
| | | | 820 | | | | | 825 | | | | | 830 | | |
| Glu | Ile | Ile | Ser | Arg | Phe | Thr | Glu | Lys | Ile | Glu | Gln | Met | Arg | Glu | Leu |

| | | | | | | | | | | | | | | | |
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| Ala | Asn | Leu | Val | Thr | Asp | Ala | Arg | Val | Arg | Val | Lys | Tyr | Gln | Gln | Leu |
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| Ile | Thr | Asn | Ser | Phe | Val | Glu | Cys | Asn | Gln | Leu | Leu | Arg | Trp | Cys | Pro |
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| Arg | Val | His | Cys | Lys | Cys | Gly | His | Val | Phe | Cys | Phe | Ala | Cys | Gly | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Trp | His | Asp | Pro | Val | Lys | Cys | Arg | Trp | Leu | Lys | Lys | Trp | Ile | Lys |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Lys | Cys | Asp | Asp | Asp | Ser | Glu | Thr | Ser | Asn | Trp | Ile | Ala | Ala | Asn | Thr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Lys | Glu | Cys | Pro | Arg | Cys | Ser | Val | Thr | Ile | Glu | Lys | Asp | Gly | Gly | Cys |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Asn | His | Met | Val | Cys | Lys | Asn | Gln | Asn | Cys | Lys | Asn | Glu | Phe | Cys | Trp |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Val | Cys | Leu | Gly | Ser | Trp | Glu | Pro | His | Gly | Ser | Ser | Trp | Tyr | Asn | Cys |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asn | Arg | Tyr | Asp | Glu | Asp | Glu | Ala | Lys | Thr | Ala | Arg | Asp | Ala | Gln | Glu |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Lys | Leu | Arg | Ser | Ser | Leu | Ala | Arg | Tyr | Leu | His | Tyr | Tyr | Asn | Arg | Tyr |
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| Met | Asn | His | Met | Gln | Ser | Met | Lys | Phe | Glu | Asn | Lys | Leu | Tyr | Ala | Ser |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Val | Lys | Gln | Lys | Met | Glu | Glu | Met | Gln | Gln | His | Asn | Met | Ser | Trp | Ile |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Glu | Val | Gln | Phe | Leu | Lys | Lys | Ala | Val | Asp | Ile | Leu | Cys | Gln | Cys | Arg |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Gln | Thr | Leu | Met | Tyr | Thr | Tyr | Val | Phe | Ala | Tyr | Tyr | Leu | Lys | Lys | Asn |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asn | Gln | Ser | Met | Ile | Phe | Glu | Asp | Asn | Gln | Lys | Asp | Leu | Glu | Ser | Ala |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Thr | Glu | Met | Leu | Ser | Glu | Tyr | Leu | Glu | Arg | Asp | Ile | Thr | Ser | Glu | Asn |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Leu | Ala | Asp | Ile | Lys | Gln | Lys | Val | Gln | Asp | Lys | Tyr | Arg | Tyr | Cys | Glu |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Lys | Arg | Cys | Ser | Val | Leu | Leu | Lys | His | Val | His | Glu | Gly | Tyr | Asp | Lys |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Glu | Trp | Trp | Glu | Tyr | Thr | Glu | | | | | | | | | |
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<210> 14
 <211> 961
 <212> PRT
 <213> Homo sapiens

<400> 14

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Gly | Gly | Ala | Gln | Thr | Pro | Asn | Ala | Thr | Ser | Glu | Gly | Cys | Gln | Ile |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ile | His | Pro | Pro | Trp | Glu | Gly | Gly | Ile | Arg | Tyr | Arg | Gly | Leu | Thr | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asp | Gln | Val | Lys | Ala | Ile | Asn | Phe | Leu | Pro | Val | Asp | Tyr | Glu | Ile | Glu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Tyr | Val | Cys | Arg | Gly | Glu | Arg | Glu | Val | Val | Gly | Pro | Lys | Val | Arg | Lys |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Cys | Leu | Ala | Asn | Gly | Ser | Trp | Thr | Asp | Met | Asp | Thr | Pro | Ser | Arg | Cys |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Val | Arg | Ile | Cys | Ser | Lys | Ser | Tyr | Leu | Thr | Leu | Glu | Asn | Gly | Lys | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Phe | Leu | Thr | Gly | Gly | Asp | Leu | Pro | Ala | Leu | Asp | Gly | Ala | Arg | Val | Asp |

| | | | | | | | | | | | | | | | |
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| | | 115 | | | | | 120 | | | | 125 | | | | |
| Phe | Arg | Cys | Asp | Pro | Asp | Phe | His | Leu | Val | Gly | Ser | Ser | Arg | Ser | Ile |
| | 130 | | | | | | 135 | | | | | 140 | | | |
| Cys | Ser | Gln | Gly | Gln | Trp | Ser | Thr | Pro | Lys | Pro | His | Cys | Gln | Val | Asn |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Arg | Thr | Pro | His | Ser | Glu | Arg | Arg | Ala | Val | Tyr | Ile | Gly | Ala | Leu | Phe |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Pro | Met | Ser | Gly | Gly | Trp | Pro | Gly | Gly | Gln | Ala | Cys | Gln | Pro | Ala | Val |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Glu | Met | Ala | Leu | Glu | Asp | Val | Asn | Ser | Arg | Arg | Asp | Ile | Leu | Pro | Asp |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Tyr | Glu | Leu | Lys | Leu | Ile | His | His | Asp | Ser | Lys | Cys | Asp | Pro | Gly | Gln |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ala | Thr | Lys | Tyr | Leu | Tyr | Glu | Leu | Leu | Tyr | Asn | Asp | Pro | Ile | Lys | Ile |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Leu | Met | Pro | Gly | Cys | Ser | Ser | Val | Ser | Thr | Leu | Val | Ala | Glu | Ala |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ala | Arg | Met | Trp | Asn | Leu | Ile | Val | Leu | Ser | Tyr | Gly | Ser | Ser | Ser | Pro |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Leu | Ser | Asn | Arg | Gln | Arg | Phe | Pro | Thr | Phe | Phe | Arg | Thr | His | Pro |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ser | Ala | Thr | Leu | His | Asn | Pro | Thr | Arg | Val | Lys | Leu | Phe | Glu | Lys | Trp |
| | 290 | | | | 295 | | | | | 300 | | | | | |
| Gly | Trp | Lys | Lys | Ile | Ala | Thr | Ile | Gln | Gln | Thr | Thr | Glu | Val | Phe | Thr |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Ser | Thr | Leu | Asp | Asp | Leu | Glu | Glu | Arg | Val | Lys | Glu | Ala | Gly | Ile | Glu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Ile | Thr | Phe | Arg | Gln | Ser | Phe | Phe | Ser | Asp | Pro | Ala | Val | Pro | Val | Lys |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Asn | Leu | Lys | Arg | Gln | Asp | Ala | Arg | Ile | Ile | Val | Gly | Leu | Phe | Tyr | Glu |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Thr | Glu | Ala | Arg | Lys | Val | Phe | Cys | Glu | Val | Tyr | Lys | Glu | Arg | Leu | Phe |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Gly | Lys | Lys | Tyr | Val | Trp | Phe | Leu | Ile | Gly | Trp | Tyr | Ala | Asp | Asn | Trp |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Phe | Lys | Ile | Tyr | Asp | Pro | Ser | Ile | Asn | Cys | Thr | Val | Asp | Glu | Met | Thr |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Glu | Ala | Val | Glu | Gly | His | Ile | Thr | Thr | Glu | Ile | Val | Met | Leu | Asn | Pro |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Ala | Asn | Thr | Arg | Ser | Ile | Ser | Asn | Met | Thr | Ser | Gln | Glu | Phe | Val | Glu |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Lys | Leu | Thr | Lys | Arg | Leu | Lys | Arg | His | Pro | Glu | Glu | Thr | Gly | Gly | Phe |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Gln | Glu | Ala | Pro | Leu | Ala | Tyr | Asp | Ala | Ile | Trp | Ala | Leu | Ala | Leu | Ala |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Leu | Asn | Lys | Thr | Ser | Gly | Gly | Gly | Gly | Arg | Ser | Gly | Val | Arg | Leu | Glu |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Asp | Phe | Asn | Tyr | Asn | Asn | Gln | Thr | Ile | Thr | Asp | Gln | Ile | Tyr | Arg | Ala |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Met | Asn | Ser | Ser | Ser | Phe | Glu | Gly | Val | Ser | Gly | His | Val | Val | Phe | Asp |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Ala | Ser | Gly | Ser | Arg | Met | Ala | Trp | Thr | Leu | Ile | Glu | Gln | Leu | Gln | Gly |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Gly | Ser | Tyr | Lys | Lys | Ile | Gly | Tyr | Tyr | Asp | Ser | Thr | Lys | Asp | Asp | Leu |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Ser | Trp | Ser | Lys | Thr | Asp | Lys | Trp | Ile | Gly | Gly | Ser | Pro | Pro | Ala | Asp |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Gln | Thr | Leu | Val | Ile | Lys | Thr | Phe | Arg | Phe | Leu | Ser | Gln | Lys | Leu | Phe |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ile | Ser | Val | Ser | Val | Leu | Ser | Ser | Leu | Gly | Ile | Val | Leu | Ala | Val | Val |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Cys | Leu | Ser | Phe | Asn | Ile | Tyr | Asn | Ser | His | Val | Arg | Tyr | Ile | Gln | Asn |

| | | |
|---------------------|-------------------------|-----------------------------|
| 610 | 615 | 620 |
| Ser Gln Pro Asn Leu | Asn Asn Leu Thr Ala Val | Gly Cys Ser Leu Ala |
| 625 | 630 | 635 |
| Leu Ala Ala Val Phe | Pro Leu Gly Leu Asp | Gly Tyr His Ile Gly Arg |
| 645 | 650 | 655 |
| Asn Gln Phe Pro Phe | Val Cys Gln Ala Arg | Leu Trp Leu Leu Gly Leu |
| 660 | 665 | 670 |
| Gly Phe Ser Leu Gly | Tyr Gly Ser Met Phe | Thr Lys Ile Trp Trp Val |
| 675 | 680 | 685 |
| His Thr Val Phe Thr | Lys Lys Glu Glu Lys | Lys Glu Trp Arg Lys Thr |
| 690 | 695 | 700 |
| Leu Glu Pro Trp Lys | Leu Tyr Ala Thr Val | Gly Leu Leu Val Gly Met |
| 705 | 710 | 715 |
| Asp Val Leu Thr Leu | Ala Ile Trp Gln Ile | Val Asp Pro Leu His Arg |
| 725 | 730 | 735 |
| Thr Ile Glu Thr Phe | Ala Lys Glu Glu Pro | Lys Glu Asp Ile Asp Val |
| 740 | 745 | 750 |
| Ser Ile Leu Pro Gln | Leu Glu His Cys Ser | Ser Arg Lys Met Asn Thr |
| 755 | 760 | 765 |
| Trp Leu Gly Ile Phe | Tyr Gly Tyr Lys Gly | Leu Leu Leu Leu Gly |
| 770 | 775 | 780 |
| Ile Phe Leu Ala Tyr | Glu Thr Lys Ser Val | Ser Thr Glu Lys Ile Asn |
| 785 | 790 | 795 |
| Asp His Arg Ala Val | Gly Met Ala Ile Tyr | Asn Val Ala Val Leu Cys |
| 805 | 810 | 815 |
| Leu Ile Thr Ala Pro | Val Thr Met Ile Leu | Ser Ser Gln Gln Asp Ala |
| 820 | 825 | 830 |
| Ala Phe Ala Phe Ala | Ser Leu Ala Ile Val | Phe Ser Ser Tyr Ile Thr |
| 835 | 840 | 845 |
| Leu Val Val Leu Phe | Val Pro Lys Met Arg | Arg Arg Leu Ile Thr Arg Gly |
| 850 | 855 | 860 |
| Glu Trp Gln Ser Glu | Ala Gln Asp Thr Met | Lys Thr Gly Ser Ser Thr |
| 865 | 870 | 875 |
| Asn Asn Asn Glu Glu | Lys Ser Arg Leu Leu | Glu Lys Glu Asn Arg |
| 885 | 890 | 895 |
| Glu Leu Glu Lys Ile | Ile Ala Glu Lys Glu | Glu Arg Val Ser Glu Leu |
| 900 | 905 | 910 |
| Arg His Gln Leu Gln | Ser Arg Gln Leu Arg | Ser Arg Arg His Pro |
| 915 | 920 | 925 |
| Pro Thr Pro Pro Glu | Pro Ser Gly Gly Leu | Pro Arg Gly Pro Pro Glu |
| 930 | 935 | 940 |
| Pro Pro Asp Arg Leu | Ser Cys Asp Gly Ser | Arg Val His Leu Leu Tyr |
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| Lys | | 960 |

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 35 40 45
 Ile Lys Thr Glu Glu Asp Pro Ile Ile Lys Gln Asp Thr Pro Ser Asn
 50 55 60
 Leu Asp Phe Asp Phe Ala Leu Pro Gln Thr Ala Thr Ala Pro Asp Ala
 65 70 75 80

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Thr | Val | Leu | Pro | Ile | Pro | Glu | Leu | Asp | Asp | Ala | Val | Val | Glu | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Phe | Phe | Ser | Ser | Ser | Thr | Asp | Ser | Thr | Pro | Met | Phe | Glu | Tyr | Glu | Asn |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Asp | Asn | Ser | Lys | Glu | Trp | Thr | Ser | Leu | Phe | Asp | Asn | Asp | Ile |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Pro | Val | Thr | Thr | Asp | Asp | Val | Ser | Leu | Ala | Asp | Lys | Ala | Ile | Glu | Ser |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Glu | Glu | Val | Ser | Leu | Val | Pro | Ser | Asn | Leu | Glu | Val | Ser | Thr | Thr |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ser | Phe | Leu | Pro | Thr | Pro | Val | Leu | Glu | Asp | Ala | Lys | Leu | Thr | Gln | Thr |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Arg | Lys | Val | Lys | Lys | Pro | Asn | Ser | Val | Val | Lys | Lys | Ser | His | His | Val |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Lys | Asp | Asp | Glu | Ser | Arg | Leu | Asp | His | Leu | Gly | Val | Val | Ala | Tyr |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Asn | Arg | Lys | Gln | Arg | Ser | Ile | Pro | Leu | Ser | Pro | Ile | Val | Pro | Glu | Ser |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ser | Asp | Pro | Ala | Ala | Leu | Lys | Arg | Ala | Arg | Asn | Thr | Glu | Ala | Ala | Arg |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Arg | Ser | Arg | Ala | Arg | Lys | Leu | Gln | Arg | Met | Lys | Gln | Leu | Glu | Asp | Lys |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Glu | Glu | Leu | Leu | Ser | Lys | Asn | Tyr | His | Leu | Glu | Asn | Glu | Val | Ala |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Arg | Leu | Lys | Lys | Leu | Val | Gly | Glu | Arg | | | | | | | |
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<210> 16
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<400> 16

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Leu | Asn | Glu | Ala | Glu | Ile | Leu | Arg | Gly | Asp | Lys | Phe | Ile | Pro | Lys |
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| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Thr | Ile | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His | Thr | Met |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Gly | Lys | Leu | His | Asp | Pro | Gln | Leu | Met | Gly | Ile | Ile | Pro | Arg | Ile |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ala | His | Asp | Ile | Phe | Asp | His | Ile | Tyr | Ser | Met | Asp | Glu | Asn | Leu | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Phe | His | Ile | Lys | Val | Ser | Tyr | Phe | Glu | Ile | Tyr | Leu | Asp | Lys | Ile | Arg |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asp | Leu | Leu | Asp | Val | Ser | Lys | Thr | Asn | Leu | Ala | Val | His | Glu | Asp | Lys |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Asn | Arg | Val | Pro | Tyr | Val | Lys | Gly | Cys | Thr | Glu | Arg | Phe | Val | Ser | Ser |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Pro | Glu | Glu | Val | Met | Asp | Val | Ile | Asp | Glu | Gly | Lys | Ala | Asn | Arg | His |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Val | Ala | Val | Thr | Asn | Met | Asn | Glu | His | Ser | Ser | Arg | Ser | His | Ser | Ile |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Phe | Leu | Ile | Asn | Ile | Lys | Gln | Glu | Asn | Val | Glu | Thr | Glu | Lys | Lys | Leu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ser | Gly | Lys | Leu | Tyr | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu | Lys | Val | Ser |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Thr | Gly | Ala | Glu | Gly | Ala | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ser | Leu | Ser | Ala | Leu | Gly | Asn | Val | Ile | Ser | Ala | Leu | Ala | Glu | Gly |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Thr | Lys | Thr | His | Val | Pro | Tyr | Arg | Asp | Ser | Lys | Met | Thr | Arg | Ile | Leu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Gln | Asp | Ser | Leu | Gly | Gly | Asn | Cys | Arg | Thr | Thr | Ile | Val | Ile | Cys | Cys |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ser | Pro | Ser | Val | Phe | Asn | Glu | Ala | Glu | Thr | Lys | Ser | Thr | Leu | Met | Phe |
| 305 | | | | | 310 | | | | | 315 | | | | 320 | |
| Gly | Gln | Arg | Ala | Lys | Thr | Ile | Lys | Asn | Thr | Val | Ser | Val | Asn | Leu | Glu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Leu | Thr | Ala | Glu | Glu | Trp | Lys | Lys | Lys | Tyr | Glu | Lys | Glu | Lys | Glu | Lys |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Asn | Lys | Thr | Leu | Lys | Asn | Val | Ile | Gln | His | Leu | Glu | Met | Glu | Leu | Asn |
| | | 355 | | | | 360 | | | | | | 365 | | | |
| Arg | Trp | Arg | Asn | Gly | Glu | Ala | Val | Pro | Glu | Asp | Glu | Gln | Ile | Ser | Ala |
| | 370 | | | | 375 | | | | | | 380 | | | | |
| Lys | Asp | Gln | Lys | Asn | Leu | Glu | Pro | Cys | Asp | Asn | Thr | Pro | Ile | Ile | Asp |
| 385 | | | | 390 | | | | | | 395 | | | | 400 | |
| Asn | Ile | Ala | Pro | Val | Val | Ala | Gly | Ile | Ser | Thr | Glu | Glu | Lys | Glu | Lys |
| | | | | 405 | | | | 410 | | | | | | 415 | |
| Tyr | Asp | Glu | Glu | Ile | Ser | Ser | Leu | Tyr | Arg | Gln | Leu | Asp | Asp | Lys | Asp |
| | | 420 | | | | | 425 | | | | | | 430 | | |
| Asp | Glu | Ile | Asn | Gln | Gln | Ser | Gln | Leu | Ala | Glu | Lys | Leu | Lys | Gln | Gln |
| | 435 | | | | | 440 | | | | | | 445 | | | |
| Met | Leu | Asp | Gln | Asp | Glu | Leu | Leu | Ala | Ser | Thr | Arg | Arg | Asp | Tyr | Glu |
| | 450 | | | | 455 | | | | | | 460 | | | | |
| Lys | Ile | Gln | Glu | Glu | Leu | Thr | Arg | Leu | Gln | Ile | Glu | Asn | Glu | Ala | Ala |
| 465 | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Asp | Glu | Val | Lys | Glu | Val | Leu | Gln | Ala | Leu | Glu | Glu | Leu | Ala | Val |
| | | | | 485 | | | | 490 | | | | | | 495 | |
| Asn | Tyr | Asp | Gln | Lys | Ser | Gln | Glu | Val | Glu | Asp | Lys | Thr | Arg | Ala | Asn |
| | | 500 | | | | | 505 | | | | | | 510 | | |
| Glu | Gln | Leu | Thr | Asp | Glu | Leu | Ala | Gln | Lys | Thr | Thr | Thr | Leu | Thr | Thr |
| | 515 | | | | | 520 | | | | | | 525 | | | |
| Thr | Gln | Arg | Glu | Leu | Ser | Gln | Leu | Gln | Glu | Leu | Ser | Asn | His | Gln | Lys |
| | 530 | | | | 535 | | | | | | 540 | | | | |
| Lys | Arg | Ala | Thr | Glu | Ile | Leu | Asn | Leu | Leu | Leu | Lys | Asp | Leu | Gly | Glu |
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| Ile | Gly | Gly | Ile | Ile | Gly | Thr | Asn | Asp | Val | Lys | Thr | Leu | Ala | Asp | Val |
| | | | 565 | | | | 570 | | | | | | | 575 | |
| Asn | Gly | Val | Ile | Glu | Glu | Glu | Phe | Thr | Met | Ala | Arg | Leu | Tyr | Ile | Ser |
| | | 580 | | | | | 585 | | | | | 590 | | | |
| Lys | Met | Lys | Ser | Glu | Val | Lys | Ser | Leu | Val | Asn | Arg | Ser | Lys | Gln | Leu |
| | 595 | | | | | 600 | | | | | | 605 | | | |
| Glu | Ser | Ala | Gln | Met | Asp | Ser | Asn | Arg | Lys | Met | Asn | Ala | Ser | Glu | Arg |
| | 610 | | | | 615 | | | | | | 620 | | | | |
| Glu | Leu | Ala | Ala | Cys | Gln | Leu | Leu | Ile | Ser | Gln | His | Glu | Ala | Lys | Ile |
| 625 | | | | 630 | | | | | 635 | | | | | 640 | |
| Lys | Ser | Leu | Thr | Asp | Tyr | Met | Gln | Asn | Met | Glu | Gln | Lys | Arg | Arg | Gln |
| | | | 645 | | | | | 650 | | | | | | 655 | |
| Leu | Glu | Glu | Ser | Gln | Asp | Ser | Leu | Ser | Glu | Glu | Leu | Ala | Lys | Leu | Arg |
| | | 660 | | | | 665 | | | | | | 670 | | | |
| Ala | Gln | Glu | Lys | Met | His | Glu | Val | Ser | Phe | Gln | Asp | Lys | Glu | Lys | Glu |
| | 675 | | | | | 680 | | | | | 685 | | | | |
| His | Leu | Thr | Arg | Leu | Gln | Asp | Ala | Glu | Glu | Met | Lys | Lys | Ala | Leu | Glu |
| | 690 | | | | 695 | | | | | 700 | | | | | |
| Gln | Gln | Met | Glu | Ser | His | Arg | Glu | Ala | His | Gln | Lys | Gln | Leu | Ser | Arg |
| 705 | | | | 710 | | | | | 715 | | | | | 720 | |
| Leu | Arg | Asp | Glu | Ile | Glu | Glu | Lys | Gln | Lys | Ile | Ile | Asp | Glu | Ile | Arg |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 725 | | | | | 730 | | | | | 735 | | | |
| Asp | Leu | Asn | Gln | Lys | Leu | Gln | Leu | Glu | Gln | Glu | Lys | Leu | Ser | Ser | Asp | | |
| | | | 740 | | | | | 745 | | | | | 750 | | | | |
| Tyr | Asn | Lys | Leu | Lys | Ile | Glu | Asp | Gln | Glu | Arg | Glu | Met | Lys | Leu | Glu | | |
| | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Lys | Leu | Leu | Leu | Leu | Asn | Asp | Lys | Arg | Glu | Gln | Ala | Arg | Glu | Asp | Leu | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| Lys | Gly | Leu | Glu | Glu | Thr | Val | Ser | Arg | Glu | Leu | Gln | Thr | Leu | His | Asn | | |
| | 785 | | | | 790 | | | | | 795 | | | | | 800 | | |
| Leu | Arg | Lys | Leu | Phe | Val | Gln | Asp | Leu | Thr | Thr | Arg | Val | Lys | Lys | Ser | | |
| | | | | 805 | | | | | 810 | | | | | | 815 | | |
| Val | Glu | Leu | Asp | Asn | Asp | Asp | Gly | Gly | Gly | Ser | Ala | Ala | Gln | Lys | Gln | | |
| | | | 820 | | | | | 825 | | | | | 830 | | | | |
| Lys | Ile | Ser | Phe | Leu | Glu | Asn | Asn | Leu | Glu | Gln | Leu | Thr | Lys | Val | His | | |
| | | 835 | | | | | 840 | | | | | 845 | | | | | |
| Lys | Gln | Leu | Val | Arg | Asp | Asn | Ala | Asp | Leu | Arg | Cys | Glu | Leu | Pro | Lys | | |
| | 850 | | | | | 855 | | | | | 860 | | | | | | |
| Leu | Glu | Lys | Arg | Leu | Arg | Ala | Thr | Ala | Glu | Arg | Val | Lys | Ala | Leu | Glu | | |
| | 865 | | | | 870 | | | | | 875 | | | | | 880 | | |
| Ser | Ala | Leu | Lys | Glu | Ala | Lys | Glu | Asn | Ala | Met | Arg | Asp | Arg | Lys | Arg | | |
| | | | | 885 | | | | | 890 | | | | | | 895 | | |
| Tyr | Gln | Gln | Glu | Val | Asp | Arg | Ile | Lys | Glu | Ala | Val | Arg | Ala | Lys | Asn | | |
| | | | 900 | | | | | 905 | | | | | 910 | | | | |
| Met | Ala | Arg | Arg | Ala | His | Ser | Ala | Gln | Ile | Ala | Lys | Pro | Ile | Arg | Pro | | |
| | | 915 | | | | | 920 | | | | | 925 | | | | | |
| Gly | His | Tyr | Pro | Ala | Ser | Ser | Pro | Thr | Ala | Val | His | Ala | Ile | Arg | Gly | | |
| | 930 | | | | | 935 | | | | | 940 | | | | | | |
| Gly | Gly | Gly | Ser | Ser | Ser | Asn | Ser | Thr | His | Tyr | Gln | Lys | | | | | |
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<210> 17

<211> 956

<212> PRT

<213> Mus musculus

<400> 17

| | | | | | | | | | | | | | | | | | |
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| Met | Ala | Asp | Pro | Ala | Glu | Cys | Ser | Ile | Lys | Val | Met | Cys | Arg | Phe | Arg | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | |
| Pro | Leu | Asn | Glu | Ala | Glu | Ile | Leu | Arg | Gly | Asp | Lys | Phe | Ile | Pro | Lys | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| Phe | Lys | Gly | Glu | Glu | Thr | Val | Val | Ile | Gly | Gln | Gly | Lys | Pro | Tyr | Val | | |
| | | 35 | | | | 40 | | | | | 45 | | | | | | |
| Phe | Asp | Arg | Val | Leu | Pro | Pro | Asn | Thr | Thr | Gln | Glu | Gln | Val | Tyr | Asn | | |
| | 50 | | | | | 55 | | | | 60 | | | | | | | |
| Ala | Cys | Ala | Lys | Gln | Ile | Val | Lys | Asp | Val | Leu | Glu | Gly | Tyr | Asn | Gly | | |
| | 65 | | | 70 | | | | | 75 | | | | | | 80 | | |
| Thr | Ile | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His | Thr | Met | | |
| | | | | 85 | | | | 90 | | | | | | 95 | | | |
| Glu | Gly | Lys | Leu | His | Asp | Pro | Gln | Leu | Met | Gly | Ile | Ile | Pro | Arg | Ile | | |
| | | | 100 | | | | 105 | | | | | | 110 | | | | |
| Ala | His | Asp | Ile | Phe | Asp | His | Ile | Tyr | Ser | Met | Asp | Glu | Asn | Leu | Glu | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Phe | His | Ile | Lys | Val | Ser | Tyr | Phe | Glu | Ile | Tyr | Leu | Asp | Lys | Ile | Arg | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Asp | Leu | Leu | Asp | Val | Ser | Lys | Thr | Asn | Leu | Ala | Val | His | Glu | Asp | Lys | | |
| | 145 | | | | 150 | | | | | 155 | | | | | 160 | | |
| Asn | Arg | Val | Pro | Tyr | Val | Lys | Gly | Cys | Thr | Glu | Arg | Phe | Val | Ser | Ser | | |
| | | | | 165 | | | | 170 | | | | | | 175 | | | |
| Pro | Glu | Glu | Val | Met | Asp | Val | Ile | Asp | Glu | Gly | Lys | Ala | Asn | Arg | His | | |
| | | | 180 | | | | 185 | | | | | | 190 | | | | |
| Val | Ala | Val | Thr | Asn | Met | Asn | Glu | His | Ser | Ser | Arg | Ser | His | Ser | Ile | | |
| | | 195 | | | | | 200 | | | | | | 205 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Ile | Asn | Ile | Lys | Gln | Glu | Asn | Val | Glu | Thr | Glu | Lys | Lys | Leu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ser | Gly | Lys | Leu | Tyr | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu | Lys | Val | Ser |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Thr | Gly | Ala | Glu | Gly | Ala | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ser | Leu | Ser | Ala | Leu | Gly | Asn | Val | Ile | Ser | Ala | Leu | Ala | Glu | Gly |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Thr | Lys | Thr | His | Val | Pro | Tyr | Arg | Asp | Ser | Lys | Met | Thr | Arg | Ile | Leu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Gln | Asp | Ser | Leu | Gly | Gly | Asn | Cys | Arg | Thr | Thr | Ile | Val | Ile | Cys | Cys |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ser | Pro | Ser | Val | Phe | Asn | Glu | Ala | Glu | Thr | Lys | Ser | Thr | Leu | Met | Phe |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Gly | Gln | Arg | Ala | Lys | Thr | Ile | Lys | Asn | Thr | Val | Ser | Val | Asn | Leu | Glu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Leu | Thr | Ala | Glu | Glu | Trp | Lys | Lys | Lys | Tyr | Glu | Lys | Glu | Lys | Glu | Lys |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Asn | Lys | Ala | Leu | Lys | Ser | Val | Leu | Gln | His | Leu | Glu | Met | Glu | Leu | Asn |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Arg | Trp | Arg | Asn | Gly | Glu | Ala | Val | Pro | Glu | Asp | Glu | Gln | Ile | Ser | Ala |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Lys | Asp | His | Lys | Ser | Leu | Glu | Pro | Cys | Asp | Asn | Thr | Pro | Ile | Ile | Asp |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Asn | Ile | Thr | Pro | Val | Val | Asp | Gly | Ile | Ser | Ala | Glu | Lys | Glu | Lys | Tyr |
| | | | | 405 | | | | 410 | | | | | | 415 | |
| Asp | Glu | Glu | Ile | Thr | Ser | Leu | Tyr | Arg | Gln | Leu | Asp | Asp | Lys | Asp | Asp |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Glu | Ile | Asn | Gln | Gln | Ser | Gln | Leu | Ala | Glu | Lys | Leu | Lys | Gln | Gln | Met |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Leu | Asp | Gln | Asp | Glu | Leu | Leu | Ala | Ser | Thr | Arg | Arg | Asp | Tyr | Glu | Lys |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Ile | Gln | Glu | Glu | Leu | Thr | Arg | Leu | Gln | Ile | Glu | Asn | Glu | Ala | Ala | Lys |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Asp | Glu | Val | Lys | Glu | Val | Leu | Gln | Ala | Leu | Glu | Glu | Leu | Ala | Val | Asn |
| | | | | 485 | | | | 490 | | | | | | 495 | |
| Tyr | Asp | Gln | Lys | Ser | Gln | Glu | Val | Glu | Asp | Lys | Thr | Arg | Ala | Asn | Glu |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Gln | Leu | Thr | Asp | Glu | Leu | Ala | Gln | Lys | Thr | Thr | Thr | Leu | Thr | Thr | Thr |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Gln | Arg | Glu | Leu | Ser | Gln | Leu | Gln | Glu | Leu | Ser | Asn | His | Gln | Lys | Lys |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Arg | Ala | Thr | Glu | Ile | Leu | Asn | Leu | Leu | Leu | Lys | Asp | Leu | Gly | Glu | Ile |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Gly | Gly | Ile | Ile | Gly | Thr | Asn | Asp | Val | Lys | Thr | Leu | Ala | Asp | Val | Asn |
| | | | | 565 | | | | 570 | | | | | | 575 | |
| Gly | Val | Ile | Glu | Glu | Glu | Phe | Thr | Met | Ala | Arg | Leu | Tyr | Ile | Ser | Lys |
| | | | 580 | | | | 585 | | | | | 590 | | | |
| Met | Lys | Ser | Glu | Val | Lys | Ser | Leu | Val | Asn | Arg | Ser | Lys | Gln | Leu | Glu |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Ser | Ala | Gln | Met | Asp | Ser | Asn | Arg | Lys | Met | Asn | Ala | Ser | Glu | Arg | Glu |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Leu | Ala | Ala | Cys | Gln | Leu | Leu | Ile | Ser | Gln | His | Glu | Ala | Lys | Ile | Lys |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Ser | Leu | Thr | Asp | Tyr | Met | Gln | Asn | Met | Glu | Gln | Lys | Arg | Arg | Gln | Leu |
| | | | 645 | | | | | 650 | | | | | | 655 | |
| Glu | Glu | Ser | Gln | Asp | Ser | Leu | Ser | Glu | Glu | Leu | Ala | Lys | Leu | Arg | Ala |
| | | | 660 | | | | 665 | | | | | | 670 | | |
| Gln | Glu | Lys | Met | His | Glu | Val | Ser | Phe | Gln | Asp | Lys | Glu | Lys | Glu | His |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Leu | Thr | Arg | Leu | Gln | Asp | Ala | Glu | Glu | Val | Lys | Lys | Ala | Leu | Glu | Gln |
| | 690 | | | | | 695 | | | | | 700 | | | | |

| | | | | | | | | | | | | | | | |
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| Gln | Met | Glu | Ser | His | Arg | Glu | Ala | His | Gln | Lys | Gln | Leu | Ser | Arg | Leu |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
| Arg | Asp | Glu | Ile | Glu | Glu | Lys | Gln | Arg | Ile | Ile | Asp | Glu | Ile | Arg | Asp |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Asn | Gln | Lys | Leu | Gln | Leu | Glu | Gln | Glu | Arg | Leu | Ser | Ser | Asp | Tyr |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Asn | Lys | Leu | Lys | Ile | Glu | Asp | Gln | Glu | Arg | Glu | Val | Lys | Leu | Glu | Lys |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Leu | Leu | Leu | Leu | Asn | Asp | Lys | Arg | Glu | Gln | Ala | Arg | Glu | Asp | Leu | Lys |
| | 770 | | | | | 775 | | | | | 780 | | | | |
| Gly | Leu | Glu | Glu | Thr | Val | Ser | Ile | Glu | Leu | Gln | Thr | Leu | His | Asn | Leu |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Arg | Lys | Leu | Phe | Val | Gln | Asp | Leu | Thr | Thr | Arg | Val | Lys | Lys | Ser | Val |
| | | | | 805 | | | | | 810 | | | | | 815 | |
| Glu | Leu | Asp | Ser | Asp | Asp | Gly | Gly | Gly | Ser | Ala | Ala | Gln | Lys | Gln | Lys |
| | | | 820 | | | | | 825 | | | | | 830 | | |
| Ile | Ser | Phe | Leu | Glu | Asn | Asn | Leu | Glu | Gln | Leu | Thr | Lys | Val | His | Lys |
| | | 835 | | | | | 840 | | | | | 845 | | | |
| Gln | Leu | Val | Arg | Asp | Asn | Ala | Asp | Leu | Arg | Cys | Glu | Leu | Pro | Lys | Leu |
| | 850 | | | | | 855 | | | | | 860 | | | | |
| Glu | Lys | Arg | Leu | Arg | Ala | Thr | Ala | Glu | Arg | Val | Lys | Ala | Leu | Glu | Ser |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 |
| Ala | Leu | Lys | Glu | Ala | Lys | Glu | Asn | Ala | Met | Arg | Asp | Arg | Lys | Arg | Tyr |
| | | | | 885 | | | | | 890 | | | | | 895 | |
| Gln | Gln | Glu | Val | Asp | Arg | Ile | Lys | Glu | Ala | Val | Arg | Ala | Lys | Asn | Met |
| | | | 900 | | | | | 905 | | | | | 910 | | |
| Ala | Arg | Arg | Ala | His | Ser | Ala | Gln | Ile | Ala | Lys | Pro | Ile | Arg | Pro | Gly |
| | | 915 | | | | | 920 | | | | | 925 | | | |
| His | Tyr | Pro | Ala | Ser | Ser | Pro | Thr | Ala | Val | His | Ala | Val | Arg | Gly | Gly |
| | 930 | | | | | 935 | | | | | 940 | | | | |
| Gly | Gly | Gly | Ser | Ser | Asn | Ser | Thr | His | Tyr | Gln | Lys | | | | |
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<210> 18
 <211> 815
 <212> PRT
 <213> Caenorhabditis elegans

| | | | | | | | | | | | | | | | |
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| <400> 18 | | | | | | | | | | | | | | | |
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| Asn | Gly | Thr | Val | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His |
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| Asp | Lys | Asn | Arg | Val | Pro | Tyr | Val | Lys | Gly | Ala | Thr | Glu | Arg | Phe | Val |
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| Gly | Gly | Pro | Asp | Glu | Val | Leu | Gln | Ala | Ile | Glu | Asp | Gly | Lys | Ser | Asn |

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| Lys | Ser | Thr | Leu | Asp | Phe | Gly | Arg | Arg | Ala | Lys | Thr | Val | Lys | Asn | Val |
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| Leu | Lys | Glu | Gln | Val | Met | Glu | Gln | Glu | Glu | Leu | Ile | Ala | Asn | Ala | Arg |
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| Asp | Ser | Leu | Arg | Glu | Glu | Cys | Ala | Lys | Leu | Lys | Ala | Ala | Glu | His | Val |
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| Val | Ser | Glu | Leu | Arg | Asp | Glu | Ile | Ala | Ala | Lys | Gln | His | Glu | Met | Asp |
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| Thr | Ala | Asp | Tyr | Glu | Lys | Val | Arg | Gln | Glu | Asp | Ala | Glu | Lys | Ser | Ser |
| | 770 | | | | | 775 | | | | | 780 | | | | |
| Glu | Leu | Gln | Asn | Ile | Ile | Leu | Thr | Asn | Glu | Arg | Arg | Glu | Gln | Ala | Arg |
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| Leu | His | Asn | Leu | Arg | Lys | Leu | Phe | Val | Gln | Asp | Leu | Gln | Gln | Arg | Ile |
| | | | 820 | | | | | 825 | | | | | 830 | | |
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| | | 835 | | | | | 840 | | | | | 845 | | | |
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| Thr | Lys | Val | His | Lys | Gln | Leu | Val | Arg | Asp | Asn | Ala | Asp | Leu | Arg | Cys |
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| Lys | Ala | Leu | Glu | Thr | Ala | Leu | Lys | Glu | Ala | Lys | Glu | Gly | Ala | Met | Arg |
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| Asp | Arg | Lys | Arg | Tyr | Gln | Tyr | Glu | Val | Asp | Arg | Ile | Lys | Glu | Ala | Val |
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| Ile | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His | Thr | Met | Glu |
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| Gly | Lys | Leu | His | Asp | Pro | Glu | Gly | Met | Gly | Ile | Ile | Pro | Arg | Ile | Val |
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| Gln | Asp | Ile | Phe | Asn | Tyr | Ile | Tyr | Ser | Met | Asp | Glu | Asn | Leu | Glu | Phe |
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| His | Ile | Lys | Val | Ser | Tyr | Phe | Glu | Ile | Tyr | Leu | Asp | Lys | Ile | Arg | Asp |
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| Leu | Leu | Asp | Val | Ser | Lys | Thr | Asn | Leu | Ser | Val | His | Glu | Asp | Lys | Asn |
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| Asp | Glu | Val | Met | Asp | Thr | Ile | Asp | Glu | Gly | Lys | Ser | Asn | Arg | His | Val |
| | | | 180 | | | | | 185 | | | | | 190 | | |
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| Leu | Ile | Asn | Val | Lys | Gln | Glu | Asn | Thr | Gln | Thr | Glu | Gln | Lys | Leu | Ser |
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| Thr | Gly | Ala | Glu | Gly | Ala | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn | Lys |
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| Ser | Leu | Ser | Ala | Leu | Gly | Asn | Val | Ile | Ser | Ala | Leu | Ala | Glu | Gly | Ser |

| | | | | | | | | | | | | | | | |
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| Thr | Val | Met | Gln | Asp | Arg | Arg | Glu | Gln | Ala | Arg | Gln | Asp | Leu | Lys | Gly |
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| Lys | Leu | Phe | Val | Gln | Asp | Leu | Ala | Thr | Arg | Val | Lys | Lys | Ser | Ala | Glu |
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| Ile | Asp | Ser | Asp | Thr | Gly | Gly | Ser | Ala | Ala | Gln | Lys | Gln | Lys | Ile | |
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| Lys | Arg | Leu | Arg | Ala | Thr | Ala | Glu | Arg | Val | Lys | Ala | Leu | Glu | Ser | Ala |
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| Leu | Lys | Glu | Ala | Lys | Glu | Asn | Ala | Ser | Arg | Asp | Arg | Lys | Arg | Tyr | Gln |
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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Leu | Asn | Glu | Ala | Glu | Glu | Arg | Ala | Gly | Ser | Lys | Phe | Ile | Leu | Lys |
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| Ile | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His | Thr | Met | Glu |
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| Gly | Val | Leu | Asp | Lys | Pro | Ser | Met | His | Gly | Ile | Ile | Pro | Arg | Ile | Val |
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| Gln | Asp | Ile | Phe | Asn | Tyr | Ile | Tyr | Gly | Met | Asp | Glu | Asn | Leu | Glu | Phe |
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| His | Ile | Lys | Ile | Ser | Tyr | Tyr | Glu | Ile | Tyr | Leu | Asp | Lys | Ile | Arg | Asp |
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| Leu | Leu | Asp | Val | Thr | Lys | Thr | Asn | Leu | Ala | Val | His | Glu | Asp | Lys | Asn |
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| Arg | Val | Pro | Phe | Val | Lys | Gly | Ala | Thr | Glu | Arg | Phe | Val | Ser | Ser | Pro |
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| Glu | Glu | Val | Met | Glu | Val | Ile | Asp | Glu | Gly | Lys | Asn | Asn | Arg | His | Val |
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| Thr | Gly | Ala | Glu | Gly | Ala | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn | Lys |
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| Lys | Ser | His | Val | Pro | Tyr | Arg | Asp | Ser | Lys | Leu | Thr | Arg | Ile | Leu | Gln |
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| Gln | Arg | Ala | Lys | Thr | Ile | Lys | Asn | Val | Val | Ser | Val | Asn | Glu | Glu | Leu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Thr | Ala | Asp | Glu | Trp | Lys | Arg | Arg | Tyr | Glu | Lys | Glu | Lys | Glu | Arg | Val |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Thr | Lys | Leu | Lys | Ala | Thr | Met | Ala | Lys | Leu | Glu | Ala | Glu | Leu | Gln | Arg |
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| Trp | Arg | Thr | Gly | Gln | Ala | Val | Ser | Val | Glu | Glu | Gln | Val | Asp | Leu | Lys |
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| Glu | Asp | Val | Pro | Ala | Glu | Ser | Pro | Ala | Thr | Ser | Thr | Thr | Ser | Leu | Ala |
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| | | | | 405 | | | | | 410 | | | | | 415 | |
| Glu | Glu | Arg | Leu | Lys | Leu | Tyr | Gln | Gln | Leu | Asp | Asp | Lys | Asp | Asp | Glu |
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| Gln | Gln | Asp | Met | Ser | Arg | Ile | Gln | Ala | Asp | Asn | Glu | Ser | Ala | Lys | Asp |
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| Glu | Val | Lys | Glu | Val | Leu | Gln | Ala | Leu | Glu | Glu | Leu | Ala | Met | Asn | Tyr |
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| Asp | Gln | Lys | Ser | Gln | Glu | Val | Glu | Asp | Lys | Asn | Lys | Glu | Asn | Glu | Asn |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Leu | Ser | Glu | Glu | Leu | Asn | Gln | Lys | Leu | Ser | Thr | Leu | Asn | Ser | Leu | Gln |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Asn | Glu | Leu | Asp | Gln | Leu | Lys | Asp | Ser | Ser | Met | His | His | Arg | Lys | Arg |
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| Val | Thr | Asp | Met | Met | Ile | Asn | Leu | Leu | Lys | Asp | Leu | Gly | Asp | Ile | Gly |
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| Thr | Ile | Val | Gly | Gly | Asn | Ala | Ala | Glu | Thr | Lys | Pro | Thr | Ala | Gly | Ser |
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| Gly | Glu | Lys | Ile | Glu | Glu | Glu | Phe | Thr | Val | Ala | Arg | Leu | Tyr | Ile | Ser |
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| Lys | Met | Lys | Ser | Glu | Val | Lys | Thr | Leu | Val | Ser | Arg | Asn | Asn | Gln | Leu |
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| Glu | Asn | Thr | Gln | Gln | Asp | Asn | Phe | Lys | Lys | Ile | Glu | Thr | His | Glu | Lys |
| | | 610 | | | | 615 | | | | | 620 | | | | |
| Asp | Leu | Ser | Asn | Cys | Lys | Leu | Leu | Ile | Gln | Gln | His | Glu | Ala | Lys | Met |
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| Ala | Ser | Leu | Gln | Glu | Ala | Ile | Lys | Asp | Ser | Glu | Asn | Lys | Lys | Arg | Met |
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| Thr | Ser | Gln | Ala | Ser | Glu | Thr | Arg | Glu | Val | Leu | Glu | Lys | Gln | Met | Glu |
| | | 690 | | | | 695 | | | | | 700 | | | | |
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| | | | | | | | | | | | | | | | | |
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| Ile | Ser | Glu | Lys | Gln | Ala | Thr | Val | Asp | Asn | Leu | Lys | Asp | Asp | Asn | Gln | |
| | | | | 725 | | | | | 730 | | | | | 735 | | |
| Arg | Leu | Ser | Leu | Ala | Leu | Glu | Lys | Leu | Gln | Ala | Asp | Tyr | Asp | Lys | Leu | |
| | | | 740 | | | | | 745 | | | | | 750 | | | |
| Lys | Gln | Glu | Glu | Val | Glu | Lys | Ala | Ala | Lys | Leu | Ala | Asp | Leu | Ser | Leu | |
| | | 755 | | | | | 760 | | | | | 765 | | | | |
| Gln | Ile | Asp | Arg | Arg | Glu | Gln | Ala | Lys | Gln | Asp | Leu | Lys | Gly | Leu | Glu | |
| | 770 | | | | | 775 | | | | | 780 | | | | | |
| Glu | Thr | Val | Ala | Lys | Glu | Leu | Gln | Thr | Leu | His | Asn | Leu | Arg | Lys | Leu | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | |
| Phe | Val | Gln | Asp | Leu | Gln | Asn | Lys | Val | Lys | Lys | Ser | Cys | Ser | Lys | Thr | |
| | | | 805 | | | | | 810 | | | | | | 815 | | |
| Glu | Glu | Glu | Asp | Glu | Asp | Thr | Gly | Gly | Asn | Ala | Ala | Gln | Lys | Gln | Lys | |
| | | | 820 | | | | | 825 | | | | | 830 | | | |
| Ile | Ser | Phe | Leu | Glu | Asn | Asn | Leu | Glu | Gln | Leu | Thr | Lys | Val | His | Lys | |
| | 835 | | | | | | 840 | | | | | 845 | | | | |
| Gln | Leu | Val | Arg | Asp | Asn | Ala | Asp | Leu | Arg | Cys | Glu | Leu | Pro | Lys | Leu | |
| | 850 | | | | 855 | | | | | | 860 | | | | | |
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| 865 | | | | | 870 | | | | | 875 | | | | | 880 | |
| Ala | Leu | Lys | Asp | Ala | Lys | Glu | Gly | Ala | Met | Arg | Asp | Arg | Lys | Arg | Tyr | |
| | | | 885 | | | | | 890 | | | | | | 895 | | |
| Gln | His | Glu | Val | Asp | Arg | Ile | Lys | Glu | Ala | Val | Arg | Gln | Lys | Asn | Leu | |
| | | | 900 | | | | | 905 | | | | | 910 | | | |
| Ala | Arg | Arg | Gly | His | Ala | Ala | Gln | Ile | Ala | Lys | Pro | Ile | Arg | Pro | Gly | |
| | 915 | | | | | | 920 | | | | | 925 | | | | |
| Gln | His | Gln | Ser | Val | Ser | Pro | Ala | Gln | Ala | Ala | Ala | Ile | Arg | Gly | Gly | |
| | 930 | | | | | 935 | | | | | 940 | | | | | |
| Gly | Gly | Leu | Ser | Gln | Asn | Gly | Pro | Met | Ile | Thr | Ser | Thr | Pro | Ile | Arg | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | |
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<400> 22

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Pro | Leu | Asn | Glu | Ser | Glu | Val | Asn | Arg | Gly | Asp | Lys | Tyr | Val | Ala | Lys | |
| | | 20 | | | | | 25 | | | | | | 30 | | | |
| Phe | Gln | Gly | Glu | Asp | Thr | Val | Val | Ile | Ala | Ser | Lys | Pro | Tyr | Ala | Phe | |
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| Asp | Arg | Val | Phe | Gln | Ser | Ser | Thr | Ser | Gln | Glu | Gln | Val | Tyr | Asn | Asp | |
| | 50 | | | | 55 | | | | | | 60 | | | | | |
| Cys | Ala | Lys | Lys | Ile | Val | Lys | Asp | Val | Leu | Glu | Gly | Tyr | Asn | Gly | Thr | |
| 65 | | | | 70 | | | | | 75 | | | | | | 80 | |
| Ile | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His | Thr | Met | Glu | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | Lys | Leu | His | Asp | Pro | Glu | Gly | Met | Gly | Ile | Ile | Pro | Arg | Ile | Val | |
| | | 100 | | | | | 105 | | | | | | 110 | | | |
| Gln | Asp | Ile | Phe | Asn | Tyr | Ile | Tyr | Ser | Met | Asp | Glu | Asn | Leu | Glu | Phe | |
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| His | Ile | Lys | Val | Ser | Tyr | Phe | Glu | Ile | Tyr | Leu | Asp | Lys | Ile | Arg | Asp | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Leu | Leu | Asp | Val | Ser | Lys | Thr | Asn | Leu | Ser | Val | His | Glu | Asp | Lys | Asn | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Arg | Val | Pro | Tyr | Val | Lys | Gly | Cys | Thr | Glu | Arg | Phe | Val | Cys | Ser | Pro | |
| | | | 165 | | | | | 170 | | | | | | 175 | | |
| Asp | Glu | Val | Met | Asp | Thr | Ile | Asp | Glu | Gly | Lys | Ser | Asn | Arg | His | Val | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 180 | | | | | 185 | | | | 190 | | | |
| Ala | Val | Thr | Asn | Met | Asn | Glu | His | Ser | Ser | Arg | Ser | His | Ser | Ile | Phe |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Leu | Ile | Asn | Val | Lys | Gln | Glu | Asn | Thr | Gln | Thr | Glu | Gln | Lys | Leu | Ser |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Gly | Lys | Leu | Tyr | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu | Lys | Val | Ser | Lys |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Gly | Ala | Glu | Gly | Ala | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn | Lys |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Leu | Ser | Ala | Leu | Gly | Asn | Val | Ile | Ser | Ala | Leu | Ala | Glu | Gly | Ser |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Thr | Tyr | Val | Pro | Tyr | Arg | Asp | Ser | Lys | Met | Thr | Arg | Ile | Leu | Gln | Asp |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Ser | Leu | Gly | Gly | Asn | Cys | Arg | Thr | Thr | Ile | Val | Ile | Cys | Cys | Ser | Pro |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ser | Ser | Tyr | Asn | Glu | Ser | Glu | Thr | Lys | Ser | Thr | Leu | Leu | Phe | Gly | Gln |
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| Arg | Ala | Lys | Thr | Ile | Lys | Asn | Thr | Val | Cys | Val | Asn | Val | Glu | Leu | Thr |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Ala | Glu | Gln | Trp | Lys | Lys | Lys | Tyr | Glu | Lys | Glu | Lys | Glu | Lys | Asn | Lys |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Thr | Leu | Arg | Asn | Thr | Ile | Gln | Trp | Leu | Glu | Asn | Glu | Leu | Asn | Arg | Trp |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Arg | Asn | Gly | Glu | Thr | Val | Pro | Ile | Asp | Glu | Gln | Phe | Asp | Lys | Glu | Lys |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Ala | Asn | Leu | Glu | Ala | Phe | Thr | Ala | Asp | Lys | Asp | Ile | Ala | Ile | Thr | Ser |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Asp | Lys | Gly | Ala | Ala | Val | Gly | Met | Ala | Gly | Ser | Phe | Thr | Asp | Ala | |
| | | | | 405 | | | | 410 | | | | | 415 | | |
| Glu | Arg | Arg | Lys | Cys | Glu | Glu | Glu | Leu | Ala | Lys | Leu | Tyr | Lys | Gln | Leu |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asp | Asp | Lys | Asp | Glu | Glu | Ile | Asn | Gln | Gln | Ser | Gln | Leu | Val | Glu | Lys |
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| Leu | Lys | Thr | Gln | Met | Leu | Asp | Gln | Glu | Glu | Leu | Leu | Ala | Ser | Thr | Arg |
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| | | | | 485 | | | | | 490 | | | | | 495 | |
| Glu | Leu | Ala | Val | Asn | Tyr | Asp | Gln | Lys | Ser | Gln | Glu | Val | Glu | Asp | Lys |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Thr | Lys | Glu | Tyr | Glu | Leu | Leu | Thr | Asp | Glu | Phe | Asn | Gln | Lys | Ser | Ala |
| | 515 | | | | | | 520 | | | | | 525 | | | |
| Thr | Leu | Ala | Ser | Ile | Asp | Ala | Glu | Leu | Gln | Lys | Leu | Lys | Glu | Met | Thr |
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| Asn | His | Gln | Lys | Lys | Arg | Ala | Ala | Glu | Met | Met | Ala | Ser | Leu | Leu | Lys |
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| Asp | Leu | Ala | Glu | Ile | Gly | Ile | Ala | Val | Gly | Asn | Asn | Asp | Val | Lys | Gln |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Pro | Glu | Gly | Thr | Gly | Met | Ile | Asp | Glu | Glu | Phe | Thr | Val | Ala | Arg | Leu |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Tyr | Ile | Ser | Lys | Met | Lys | Ser | Glu | Val | Lys | Thr | Met | Val | Lys | Arg | Cys |
| | 595 | | | | | | 600 | | | | | 605 | | | |
| Lys | Gln | Leu | Glu | Ser | Thr | Gln | Thr | Glu | Ser | Asn | Lys | Lys | Met | Glu | Glu |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Asn | Glu | Lys | Glu | Leu | Ala | Ala | Cys | Gln | Leu | Arg | Ile | Ser | Gln | His | Glu |
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| Ala | Lys | Ile | Lys | Ser | Leu | Thr | Glu | Tyr | Leu | Gln | Asn | Asp | Glu | Gln | Lys |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Lys | Arg | Gln | Leu | Glu | Glu | Ser | Leu | Asp | Ser | Leu | Gly | Glu | Glu | Leu | Val |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Gln | Leu | Arg | Ala | Gln | Glu | Lys | Val | His | Glu | Met | Glu | Lys | Glu | His | Leu |

| | | | | | | | | | | | | | | | | | | |
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| Asn | Lys | 675 | Val | Gln | Thr | Ala | Asn | 680 | Glu | Val | Lys | Gln | Ala | 685 | Val | Glu | Gln | Gln |
| | 690 | | | | | | 695 | | | | | | 700 | | | | | |
| Ile | Gln | Ser | His | Arg | Glu | Thr | His | Gln | Lys | Gln | Ile | Ser | Ser | Leu | Arg | | | |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 | | | |
| Asp | Glu | Val | Glu | Ala | Lys | Glu | Lys | Leu | Ile | Thr | Asp | Leu | Gln | Asp | Gln | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | |
| Asn | Gln | Lys | Met | Val | Leu | Glu | Thr | Glu | Arg | Leu | Arg | Val | Glu | His | Glu | | | |
| | | | 740 | | | | | | 745 | | | | | 750 | | | | |
| Arg | Leu | Lys | Ala | Thr | Asp | Gln | Glu | Lys | Ser | Arg | Lys | Leu | His | Glu | Leu | | | |
| | | 755 | | | | | 760 | | | | | | 765 | | | | | |
| Thr | Val | Met | Gln | Asp | Arg | Arg | Glu | Gln | Ala | Arg | Gln | Asp | Leu | Lys | Gly | | | |
| | 770 | | | | | 775 | | | | | | 780 | | | | | | |
| Leu | Glu | Glu | Thr | Val | Ala | Lys | Glu | Leu | Gln | Thr | Leu | His | Asn | Leu | Arg | | | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | | | |
| Lys | Leu | Phe | Val | Gln | Asp | Leu | Ala | Thr | Arg | Val | Lys | Lys | Ser | Ala | Glu | | | |
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| Val | Asp | Ser | Asp | Asp | Thr | Gly | Gly | Ser | Ala | Ala | Gln | Lys | Gln | Lys | Ile | | | |
| | | | 820 | | | | | 825 | | | | | 830 | | | | | |
| Ser | Phe | Leu | Glu | Asn | Asn | Leu | Glu | Gln | Leu | Thr | Lys | Val | His | Lys | Gln | | | |
| | | 835 | | | | | 840 | | | | | | 845 | | | | | |
| Leu | Val | Arg | Asp | Asn | Ala | Asp | Leu | Arg | Cys | Glu | Leu | Pro | Lys | Leu | Glu | | | |
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| Phe | Arg | Leu | Arg | Ala | Thr | Ala | Glu | Arg | Val | Lys | Ala | Leu | Glu | Ser | Ala | | | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | | | |
| Leu | Lys | Glu | Ala | Lys | Glu | Asn | Ala | Ser | Arg | Asp | Arg | Lys | Arg | Tyr | Gln | | | |
| | | | | 885 | | | | | 890 | | | | | 895 | | | | |
| Gln | Glu | Val | Asp | Arg | Ile | Lys | Glu | Ala | Val | Arg | Ser | Lys | Asn | Met | Ala | | | |
| | | | 900 | | | | | 905 | | | | | 910 | | | | | |
| Arg | Arg | Gly | His | Ser | Ala | Gln | Ile | Ala | Lys | Pro | Ile | Arg | Pro | Gly | Gln | | | |
| | | 915 | | | | | 920 | | | | | | 925 | | | | | |
| His | Pro | Ala | Ala | Ser | Pro | Thr | His | Pro | Gly | Thr | Val | Arg | Gly | Gly | Gly | | | |
| | 930 | | | | | 935 | | | | | 940 | | | | | | | |
| Ser | Phe | Val | Gln | Asn | Asn | Gln | Pro | Val | Gly | Leu | Arg | Gly | Gly | Gly | Gly | | | |
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<400> 23

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| 1 | | | | 5 | | | | | 10 | | | | 15 | | |
| Gln | Asn | Arg | Val | Glu | Ile | Glu | Ser | Gly | Gly | Gln | Pro | Ile | Val | Thr | Phe |
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| Gln | Gly | Pro | Asp | Thr | Cys | Thr | Val | Asp | Ser | Lys | Glu | Ala | Gln | Gly | Ser |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | Thr | Phe | Asp | Arg | Val | Phe | Asp | Met | Ser | Cys | Lys | Gln | Ser | Asp | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Phe | Asp | Phe | Ser | Ile | Lys | Pro | Thr | Val | Asp | Asp | Ile | Leu | Asn | Gly | Tyr |
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| Asn | Gly | Thr | Val | Phe | Ala | Tyr | Gly | Gln | Thr | Gly | Ala | Gly | Lys | Ser | Tyr |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Thr | Met | Met | Gly | Thr | Ser | Ile | Asp | Asp | Pro | Asp | Gly | Arg | Gly | Val | Ile |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Pro | Arg | Ile | Val | Glu | Gln | Ile | Phe | Thr | Ser | Ile | Leu | Ser | Ser | Ala | Ala |
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| Asn | Ile | Glu | Tyr | Thr | Val | Arg | Val | Ser | Tyr | Met | Glu | Ile | Tyr | Met | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Arg | Asp | Leu | Leu | Ala | Pro | Gln | Asn | Asp | Asn | Leu | Pro | Val | His |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Glu | Glu | Lys | Asn | Arg | Gly | Val | Tyr | Val | Lys | Gly | Leu | Leu | Glu | Ile | Tyr |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Val | Ser | Ser | Val | Gln | Glu | Val | Tyr | Glu | Val | Met | Arg | Arg | Gly | Gly | Asn |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ala | Arg | Ala | Val | Ala | Ala | Thr | Asn | Met | Asn | Gln | Glu | Ser | Ser | Arg | Ser |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| His | Ser | Ile | Phe | Val | Ile | Thr | Ile | Thr | Gln | Lys | Asn | Val | Glu | Thr | Gly |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ser | Ala | Lys | Ser | Gly | Gln | Leu | Phe | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu |
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| Lys | Val | Gly | Lys | Thr | Gly | Ala | Ser | Gly | Gln | Thr | Leu | Glu | Glu | Ala | Lys |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ile | Asn | Lys | Ser | Leu | Ser | Ala | Leu | Gly | Met | Val | Ile | Asn | Ala | Leu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Thr | Asp | Gly | Lys | Ser | Ser | His | Val | Pro | Tyr | Arg | Asp | Ser | Lys | Leu | Thr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
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| Ile | Asn | Cys | Ser | Pro | Ser | Ser | Tyr | Asn | Asp | Ala | Glu | Thr | Leu | Ser | Thr |
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| Leu | Arg | Phe | Gly | Met | Arg | Ala | Lys | Ser | Ile | Lys | Asn | Lys | Ala | Lys | Val |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asn | Ala | Glu | Leu | Ser | Pro | Ala | Glu | Leu | Lys | Gln | Met | Leu | Ala | Lys | Ala |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Lys | Thr | Gln | Ile | Thr | Ser | Phe | Glu | Asn | Tyr | Ile | Val | Asn | Leu | Glu | Ser |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Glu | Val | Gln | Val | Trp | Arg | Gly | Gly | Glu | Thr | Val | Pro | Lys | Glu | Lys | Trp |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Val | Pro | Pro | Leu | Glu | Leu | Ala | Ile | Thr | Pro | Ser | Lys | Ser | Ala | Ser | Thr |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Thr | Ala | Arg | Pro | Ser | Thr | Pro | Ser | Arg | Leu | Leu | Pro | Glu | Ser | Arg | Ala |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Glu | Thr | Pro | Ala | Ile | Ser | Asp | Arg | Ala | Gly | Thr | Pro | Ser | Leu | Pro | Leu |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asp | Lys | Asp | Glu | Arg | Glu | Glu | Phe | Leu | Arg | Arg | Glu | Asn | Glu | Leu | Gln |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Asp | Gln | Ile | Ala | Glu | Lys | Glu | Ser | Ile | Ala | Ala | Ala | Ala | Glu | Arg | Gln |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Leu | Arg | Glu | Thr | Lys | Glu | Glu | Leu | Ile | Ala | Leu | Lys | Asp | His | Asp | Ser |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Lys | Leu | Gly | Lys | Glu | Asn | Glu | Arg | Leu | Ile | Ser | Glu | Ser | Asn | Glu | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Lys | Met | Gln | Leu | Glu | Arg | Leu | Ala | Phe | Glu | Asn | Lys | Glu | Ala | Gln | Ile |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Thr | Ile | Asp | Gly | Leu | Lys | Asp | Ala | Asn | Ser | Glu | Leu | Thr | Ala | Glu | Leu |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Asp | Glu | Val | Lys | Gln | Gln | Met | Leu | Asp | Met | Lys | Met | Ser | Ala | Lys | Glu |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Thr | Ser | Ala | Val | Leu | Asp | Glu | Lys | Glu | Lys | Lys | Lys | Ala | Glu | Lys | Met |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Ala | Lys | Met | Met | Ala | Gly | Phe | Asp | Leu | Ser | Gly | Asp | Val | Phe | Ser | Asp |
| | | | | 565 | | | | 570 | | | | | | 575 | |
| Asn | Glu | Arg | Ala | Val | Ala | Asp | Ala | Ile | Ala | Gln | Leu | Asp | Ala | Leu | Phe |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Glu | Ile | Ser | Ser | Ala | Gly | Asp | Ala | Ile | Pro | Pro | Glu | Asp | Ile | Lys | Ala |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Leu | Arg | Glu | Lys | Leu | Val | Glu | Thr | Gln | Gly | Phe | Val | Arg | Gln | Ala | Glu |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Leu | Ser | Ser | Phe | Ser | Ala | Ala | Ser | Ser | Asp | Ala | Glu | Ala | Arg | Lys | Arg |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Glu | Leu | Glu | Ala | Arg | Leu | Glu | Ala | Leu | Gln | Gln | Glu | His | Glu | Glu |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Leu | Leu | Ser | Arg | Asn | Leu | Thr | Glu | Ala | Asp | Lys | Glu | Glu | Val | Lys | Ala |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Leu | Leu | Ala | Lys | Ser | Leu | Ser | Asp | Lys | Ser | Ala | Val | Gln | Val | Glu | Leu |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Val | Glu | Gln | Leu | Lys | Ala | Asp | Ile | Ala | Leu | Lys | Asn | Ser | Glu | Thr | Glu |
| | 690 | | | | | 695 | | | | | 700 | | | | |
| His | Leu | Lys | Ala | Leu | Val | Asp | Asp | Leu | Gln | Arg | Arg | Val | Lys | Ala | Gly |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
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| | | | | 725 | | | | | 730 | | | | | | 735 |
| Ala | Glu | Phe | Asp | Val | Met | Lys | Lys | Ser | Leu | Met | Arg | Asp | Leu | Gln | Asn |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Arg | Cys | Glu | Arg | Val | Val | Glu | Leu | Glu | Ile | Ser | Leu | Asp | Glu | Thr | Arg |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Glu | Gln | Tyr | Asn | Asn | Val | Leu | Arg | Ser | Ser | Asn | Asn | Arg | Ala | Gln | Gln |
| | | 770 | | | | 775 | | | | | 780 | | | | |
| Lys | Lys | Met | Ala | Phe | Leu | Glu | Arg | Asn | Leu | Glu | Gln | Leu | Thr | Gln | Val |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Gln | Arg | Gln | Leu | Val | Glu | Gln | Asn | Ser | Ala | Leu | Lys | Lys | Glu | Val | Ala |
| | | | | 805 | | | | | 810 | | | | | | 815 |
| Ile | Ala | Glu | Arg | Lys | Leu | Met | Ala | Arg | Asn | Glu | Arg | Ile | Gln | Ser | Leu |
| | | | 820 | | | | | 825 | | | | | 830 | | |
| Glu | Ser | Leu | Leu | Gln | Glu | Ser | Gln | Glu | Lys | Met | Ala | Gln | Ala | Asn | His |
| | | 835 | | | | | 840 | | | | | 845 | | | |
| Lys | Phe | Glu | Val | Gln | Leu | Ala | Ala | Val | Lys | Asp | Arg | Leu | Glu | Ala | Ala |
| | 850 | | | | | 855 | | | | | 860 | | | | |
| Lys | Ala | Gly | Ser | Thr | Arg | Gly | Leu | Gly | Thr | Asp | Ala | Gly | Leu | Gly | Gly |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 |
| Phe | Ser | Ile | Gly | Ser | Arg | Ile | Ala | Lys | Pro | Leu | Arg | Gly | Gly | Gly | Asp |
| | | | | 885 | | | | | 890 | | | | | | 895 |
| Ala | Val | Ala | Gly | Ala | Thr | Ala | Thr | Asn | Pro | Thr | Ile | Ala | Thr | Leu | Gln |
| | | | 900 | | | | | 905 | | | | | 910 | | |
| Gln | Asn | Pro | Pro | Glu | Asn | Lys | Arg | Ser | Ser | Trp | Phe | Phe | Gln | Lys | Ser |
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 <211> 1031
 <212> PRT
 <213> Strongylocentrotus purpuratus

<400> 24

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Met | Asn | Ala | Thr | Glu | Gln | Asn | Thr | Ser | His | Ile | Cys | Thr | Lys | Phe |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ile | Ser | Glu | Glu | Gln | Val | Gln | Ile | Gly | Gly | Lys | Leu | Asn | Met | Phe | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Arg | Ile | Phe | Lys | Pro | Asn | Thr | Thr | Gln | Glu | Glu | Val | Tyr | Asn | Lys | Ala |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ala | Arg | Gln | Ile | Val | Lys | Asp | Val | Leu | Asp | Gly | Tyr | Asn | Gly | Thr | Ile |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | Phe | Thr | Met | Glu | Gly |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Val | Met | Gly | Asn | Pro | Gln | Tyr | Met | Gly | Ile | Ile | Pro | Arg | Ile | Val | Gln |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asp | Ile | Phe | Asn | His | Ile | Tyr | Gln | Met | Asp | Glu | Ser | Leu | Glu | Phe | His |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ile | Lys | Val | Ser | Tyr | Phe | Glu | Ile | Tyr | Met | Asp | Arg | Ile | Arg | Asp | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Leu | Asp | Val | Ser | Lys | Thr | Asn | Leu | Ser | Val | His | Glu | Asp | Lys | Asn | Arg |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 | Val | Pro | Phe | Val | Lys | Gly | Ala | Thr | Glu | Arg | Phe | Ala | Ser | Ser | Pro | Glu |
| | | | | 165 | | | | | | 170 | | | | | 175 | |
| | Glu | Val | Met | Asp | Val | Ile | Glu | Glu | Gly | Lys | Ser | Asn | Arg | His | Ile | Ala |
| | | | 180 | | | | | | 185 | | | | | 190 | | |
| | Val | Thr | Asn | Met | Asn | Glu | His | Ser | Ser | Arg | Ser | His | Ser | Ile | Phe | Leu |
| | | | 195 | | | | | 200 | | | | | 205 | | | |
| | Ile | Gln | Val | Lys | Gln | Glu | Asn | Met | Glu | Thr | Lys | Lys | Lys | Leu | Ser | Gly |
| | | | 210 | | | | 215 | | | | | 220 | | | | |
| | Lys | Leu | Tyr | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu | Lys | Val | Ser | Lys | Thr |
| 225 | | | | | 230 | | | | | | 235 | | | | | 240 |
| | Gly | Ala | Glu | Gly | Thr | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn | Lys | Ser |
| | | | | 245 | | | | | | 250 | | | | | 255 | |
| | Leu | Ser | Ala | Leu | Gly | Asn | Val | Ile | Ser | Ala | Leu | Ala | Asp | Gly | Lys | Lys |
| | | | 260 | | | | | | 265 | | | | | 270 | | |
| | Ser | His | Ile | Pro | Tyr | Arg | Asp | Ser | Lys | Met | Thr | Arg | Ile | Leu | Gln | Glu |
| | | | 275 | | | | | 280 | | | | | 285 | | | |
| | Ser | Leu | Gly | Gly | Asn | Ala | Arg | Thr | Thr | Ile | Val | Ile | Cys | Cys | Ser | Pro |
| | | | 290 | | | | 295 | | | | | 300 | | | | |
| | Ser | Ser | Phe | Asn | Glu | Ser | Glu | Ser | Lys | Ser | Thr | Leu | Met | Phe | Gly | Gln |
| 305 | | | | | | 310 | | | | | 315 | | | | | 320 |
| | Arg | Ala | Lys | Thr | Ile | Lys | Asn | Thr | Val | Thr | Val | Asn | Met | Glu | Leu | Thr |
| | | | | 325 | | | | | | 330 | | | | | 335 | |
| | Ala | Glu | Glu | Trp | Arg | Asn | Arg | Tyr | Glu | Lys | Glu | Lys | Glu | Lys | Asn | Gly |
| | | | 340 | | | | | | 345 | | | | | 350 | | |
| | Arg | Leu | Lys | Ala | Gln | Leu | Leu | Ile | Leu | Glu | Asn | Glu | Leu | Gln | Arg | Trp |
| | | | 355 | | | | | 360 | | | | | 365 | | | |
| | Arg | Ala | Gly | Glu | Ser | Val | Pro | Val | Lys | Glu | Gln | Gly | Asn | Lys | Asn | Asp |
| | | | 370 | | | | 375 | | | | | 380 | | | | |
| | Glu | Ile | Leu | Lys | Glu | Met | Met | Lys | Pro | Lys | Gln | Met | Thr | Val | His | Val |
| 385 | | | | | 390 | | | | | | 395 | | | | | 400 |
| | Ser | Glu | Glu | Glu | Lys | Asn | Lys | Trp | Glu | Glu | Lys | Val | Lys | Leu | Tyr | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| | Glu | Gln | Leu | Asp | Glu | Lys | Asp | Ser | Glu | Ile | Asp | Asn | Gln | Ser | Arg | Leu |
| | | | 420 | | | | | | 425 | | | | | 430 | | |
| | Thr | Glu | Lys | Leu | Lys | Gln | Gln | Met | Leu | Glu | Gln | Glu | Glu | Leu | Leu | Ser |
| | | | 435 | | | | | 440 | | | | | 445 | | | |
| | Ser | Met | Gln | Arg | Asp | Tyr | Glu | Leu | Leu | Gln | Ser | Gln | Met | Gly | Arg | Leu |
| | | | 450 | | | | 455 | | | | | 460 | | | | |
| | Glu | Ala | Glu | Asn | Ala | Ala | Lys | Glu | Glu | Ala | Lys | Glu | Val | Leu | Gln | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| | Ala | Leu | Glu | Glu | Met | Ala | Val | Asn | Tyr | Asp | Glu | Lys | Ser | Lys | Glu | Val |
| | | | | 485 | | | | | 490 | | | | | | 495 | |
| | Glu | Asp | Lys | Asn | Arg | Met | Asn | Glu | Thr | Leu | Ser | Glu | Glu | Val | Asn | Glu |
| | | | 500 | | | | | | 505 | | | | | 510 | | |
| | Lys | Met | Thr | Ala | Leu | His | Thr | Thr | Ser | Thr | Glu | Leu | Gln | Lys | Leu | Gln |
| | | | 515 | | | | | 520 | | | | | 525 | | | |
| | Glu | Leu | Glu | Gln | His | Gln | Arg | Arg | Arg | Ile | Thr | Glu | Met | Met | Ala | Ser |
| | | | 530 | | | | 535 | | | | | 540 | | | | |
| | Leu | Leu | Lys | Asp | Leu | Gly | Glu | Ile | Gly | Thr | Ala | Leu | Gly | Gly | Asn | Ala |
| 545 | | | | | 550 | | | | | | 555 | | | | | 560 |
| | Ala | Asp | Met | Lys | Pro | Asn | Val | Glu | Asn | Ile | Glu | Lys | Val | Asp | Glu | Glu |
| | | | | 565 | | | | | | 570 | | | | | 575 | |
| | Phe | Thr | Met | Ala | Arg | Leu | Phe | Val | Ser | Lys | Met | Lys | Thr | Glu | Val | Lys |
| | | | 580 | | | | | | 585 | | | | | 590 | | |
| | Thr | Met | Ser | Gln | Arg | Cys | Lys | Ile | Leu | Glu | Ala | Ser | Asn | Ala | Glu | Asn |
| | | | 595 | | | | 600 | | | | | | 605 | | | |
| | Glu | Thr | Lys | Ile | Arg | Thr | Ser | Glu | Asp | Glu | Leu | Asp | Ser | Cys | Arg | Met |
| | | | 610 | | | | 615 | | | | | 620 | | | | |
| | Thr | Ile | Gln | Gln | His | Glu | Ala | Lys | Met | Lys | Ser | Leu | Ser | Glu | Asn | Ile |
| 625 | | | | | 630 | | | | | | 635 | | | | | 640 |
| | Arg | Glu | Thr | Glu | Gly | Lys | Lys | Arg | His | Leu | Glu | Asp | Ser | Leu | Asp | Met |

| | | | | | | | | | | | | | | | | | |
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| Leu | Asn | Glu | Glu | 645 | Val | Lys | Leu | Arg | 650 | Ala | Ala | Glu | Glu | Ile | 655 | Arg | Leu |
| | | | 660 | Ile | | | | 665 | | | | | | 670 | | | |
| Thr | Asp | Gln | Glu | Asp | Lys | Lys | Arg | Glu | Glu | Glu | Asp | Lys | Met | Gln | Ser | | |
| | | 675 | | | | | 680 | | | | | 685 | | | | | |
| Ala | Thr | Glu | Met | Gln | Ala | Ser | Met | Ser | Glu | Gln | Met | Glu | Ser | His | Arg | | |
| | 690 | | | | | 695 | | | | | 700 | | | | | | |
| Asp | Ala | His | Gln | Lys | Gln | Leu | Ala | Asn | Leu | Arg | Thr | Glu | Ile | Asn | Glu | | |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 | | |
| Lys | Glu | His | Gln | Met | Glu | Glu | Leu | Lys | Asp | Val | Asn | Gln | Arg | Met | Thr | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | |
| Leu | Gln | His | Glu | Lys | Leu | Gln | Leu | Asp | Tyr | Glu | Lys | Leu | Lys | Ile | Glu | | |
| | | | 740 | | | | | 745 | | | | | 750 | | | | |
| Glu | Ala | Glu | Lys | Ala | Ala | Lys | Leu | Arg | Glu | Leu | Ser | Gln | Gln | Phe | Asp | | |
| | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Arg | Arg | Glu | Gln | Ala | Lys | Gln | Asp | Leu | Lys | Gly | Leu | Glu | Glu | Thr | Val | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| Ala | Lys | Glu | Leu | Gln | Thr | Leu | His | Asn | Leu | Arg | Lys | Leu | Phe | Val | Ser | | |
| 785 | | | | | 790 | | | | 795 | | | | | | 800 | | |
| Asp | Leu | Gln | Asn | Arg | Val | Lys | Lys | Ala | Leu | Glu | Gly | Gly | Asp | Arg | Asp | | |
| | | | 805 | | | | | | 810 | | | | | 815 | | | |
| Asp | Asp | Ser | Gly | Gly | Ser | Gln | Ala | Gln | Lys | Gln | Lys | Ile | Ser | Phe | Leu | | |
| | | 820 | | | | | | 825 | | | | | 830 | | | | |
| Glu | Asn | Asn | Leu | Glu | Gln | Leu | Thr | Lys | Val | His | Lys | Gln | Leu | Val | Arg | | |
| | | 835 | | | | | 840 | | | | | 845 | | | | | |
| Asp | Asn | Ala | Asp | Leu | Arg | Cys | Glu | Leu | Pro | Lys | Leu | Glu | Arg | Arg | Leu | | |
| | 850 | | | | | 855 | | | | | 860 | | | | | | |
| Arg | Ala | Thr | Ser | Glu | Arg | Val | Lys | Ala | Leu | Glu | Met | Ser | Leu | Lys | Glu | | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | | |
| Thr | Lys | Glu | Gly | Ala | Met | Arg | Asp | Arg | Lys | Arg | Tyr | Gln | Gln | Glu | Val | | |
| | | | 885 | | | | | 890 | | | | | | 895 | | | |
| Asp | Arg | Ile | Arg | Glu | Ala | Val | Arg | Gln | Arg | Asn | Phe | Ala | Lys | Arg | Gly | | |
| | | 900 | | | | | | 905 | | | | | 910 | | | | |
| Ser | Ser | Ala | Gln | Ile | Ala | Lys | Ala | Ile | Arg | Ala | Gly | His | Pro | Pro | Pro | | |
| | | 915 | | | | | 920 | | | | | 925 | | | | | |
| Ser | Pro | Gly | Gly | Ser | Thr | Gly | Ile | Arg | Gly | Gly | Gly | Tyr | Ser | Gly | Ile | | |
| | 930 | | | | | 935 | | | | | 940 | | | | | | |
| Arg | Gly | Gly | Gly | Ser | Pro | Val | Ile | Arg | Pro | Pro | Ser | His | Gly | Ser | Pro | | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | | |
| Glu | Pro | Ile | Ser | His | Asn | Asn | Ser | Phe | Glu | Lys | Ser | Leu | Asn | Pro | Asn | | |
| | | | 965 | | | | | | 970 | | | | | 975 | | | |
| Asp | Ala | Glu | Asn | Met | Glu | Lys | Lys | Ala | Asn | Lys | Arg | Leu | Pro | Lys | Leu | | |
| | | 980 | | | | | | 985 | | | | | 990 | | | | |
| Pro | Pro | Gly | Asn | Lys | Leu | Thr | Glu | Ser | Asp | Ile | Ala | Ala | Met | Lys | | | |
| | | 995 | | | | | 1000 | | | | | 1005 | | | | | |
| Ala | Arg | Ser | Lys | Ala | Arg | Asn | Asn | Thr | Pro | Gly | Lys | Ala | Pro | Leu | Thr | | |
| | 1010 | | | | | 1015 | | | | | 1020 | | | | | | |
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<210> 25

<211> 935

<212> PRT

<213> Syncephalastrum racemosum

<400> 25

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| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Ser | Leu | Glu | Ile | Arg | Glu | Gly | Gly | Thr | Pro | Ile | Ile | Asp | Ile | Asp | Pro |
| | | 20 | | | | | | 25 | | | | 30 | | | |
| Glu | Gly | Thr | Gln | Leu | Glu | Leu | Lys | Gly | Lys | Glu | Phe | Lys | Gly | Asn | Phe |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| | | | | | | | | | | | | | | | |
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| Asn | Phe | Asp | Lys | Val | Phe | Gly | Met | Asn | Thr | Ala | Gln | Lys | Asp | Val | Phe |
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| Asp | Tyr | Ser | Ile | Lys | Thr | Ile | Val | Asp | Asp | Val | Thr | Ala | Gly | Tyr | Asn |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Gly | Thr | Val | Phe | Ala | Tyr | Gly | Gln | Thr | Gly | Ser | Gly | Lys | Thr | Phe | Thr |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Met | Met | Gly | Ala | Asp | Ile | Asp | Asp | Glu | Lys | Thr | Lys | Gly | Ile | Ile | Pro |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Arg | Ile | Val | Glu | Gln | Ile | Phe | Asp | Ser | Ile | Met | Ala | Ser | Pro | Ser | Asn |
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| Leu | Glu | Phe | Thr | Val | Lys | Val | Ser | Tyr | Met | Glu | Ile | Tyr | Met | Glu | Lys |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Val | Arg | Asp | Leu | Leu | Asn | Pro | Ser | Ser | Glu | Asn | Leu | Pro | Ile | His | Glu |
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| Asp | Lys | Thr | Lys | Gly | Val | Tyr | Val | Lys | Gly | Leu | Leu | Glu | Val | Tyr | Val |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Gly | Ser | Thr | Asp | Glu | Val | Tyr | Glu | Val | Met | Arg | Arg | Gly | Ser | Asn | Asn |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Arg | Val | Val | Ala | Tyr | Thr | Asn | Met | Asn | Ala | Glu | Ser | Ser | Arg | Ser | His |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ser | Ile | Val | Met | Phe | Thr | Ile | Thr | Gln | Lys | Asn | Val | Asp | Thr | Gly | Ala |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ala | Lys | Ser | Gly | Lys | Leu | Tyr | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu | Lys |
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| Val | Gly | Lys | Thr | Gly | Ala | Ser | Gly | Gln | Thr | Leu | Glu | Glu | Ala | Lys | Lys |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Ile | Asn | Lys | Ser | Leu | Thr | Ala | Leu | Gly | Met | Val | Ile | Asn | Ala | Leu | Thr |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Asp | Gly | Lys | Ser | Ser | His | Val | Pro | Tyr | Arg | Asp | Ser | Lys | Leu | Thr | Arg |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ile | Leu | Gln | Glu | Ser | Leu | Gly | Gly | Asn | Ser | Arg | Thr | Thr | Leu | Ile | Ile |
| | 290 | | | | | 295 | | | | 300 | | | | | |
| Asn | Cys | Ser | Pro | Ser | Ser | Tyr | Asn | Glu | Ala | Glu | Thr | Leu | Ser | Thr | Leu |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Arg | Phe | Gly | Ala | Arg | Ala | Lys | Ser | Ile | Lys | Asn | Lys | Ala | Lys | Val | Asn |
| | | | 325 | | | | | | 330 | | | | | 335 | |
| Ala | Asp | Leu | Ser | Pro | Ala | Glu | Leu | Lys | Ala | Leu | Leu | Lys | Lys | Val | Lys |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Ser | Glu | Ala | Val | Thr | Tyr | Gln | Thr | Tyr | Ile | Ala | Ala | Leu | Glu | Gly | Glu |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Val | Asn | Val | Trp | Arg | Thr | Gly | Gly | Thr | Val | Pro | Glu | Gly | Lys | Trp | Val |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Thr | Met | Asp | Lys | Val | Ser | Lys | Gly | Asp | Phe | Ala | Gly | Leu | Pro | Pro | Ala |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Pro | Gly | Phe | Lys | Ser | Pro | Val | Ser | Asp | Glu | Gly | Ser | Arg | Pro | Ala | Thr |
| | | | 405 | | | | | | 410 | | | | | 415 | |
| Pro | Val | Pro | Thr | Leu | Glu | Lys | Asp | Glu | Arg | Glu | Glu | Phe | Ile | Lys | Arg |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Glu | Asn | Glu | Leu | Met | Asp | Gln | Ile | Ser | Glu | Lys | Glu | Thr | Glu | Leu | Thr |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Asn | Arg | Glu | Lys | Leu | Leu | Glu | Ser | Leu | Arg | Glu | Glu | Met | Gly | Tyr | Tyr |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Lys | Glu | Gln | Glu | Gln | Ser | Val | Thr | Lys | Glu | Asn | Gln | Gln | Met | Thr | Ser |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Glu | Leu | Ser | Glu | Leu | Arg | Leu | Gln | Leu | Gln | Lys | Val | Ser | Tyr | Glu | Ser |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Lys | Glu | Asn | Ala | Ile | Thr | Val | Asp | Ser | Leu | Lys | Glu | Ala | Asn | Gln | Asp |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Leu | Met | Ala | Glu | Leu | Glu | Glu | Leu | Lys | Lys | Asn | Leu | Ser | Glu | Met | Arg |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Gln | Ala | His | Lys | Asp | Ala | Thr | Asp | Ser | Asp | Lys | Glu | Lys | Arg | Lys | Ala |
| | 530 | | | | | 535 | | | | | 540 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Lys | Met | Ala | Gln | Met | Met | Ser | Gly | Phe | Asp | Pro | Ser | Gly | Ile | Leu |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Asn | Asp | Lys | Glu | Arg | Gln | Ile | Arg | Asn | Ala | Leu | Ser | Lys | Leu | Asp | Gly |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Glu | Gln | Gln | Gln | Thr | Leu | Thr | Val | Glu | Asp | Leu | Val | Ser | Leu | Arg | Arg |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Glu | Leu | Ala | Glu | Ser | Lys | Met | Leu | Val | Glu | Gln | His | Thr | Lys | Thr | Ile |
| | | 595 | | | | | 600 | | | | 605 | | | | |
| Ser | Asp | Leu | Ser | Ala | Asp | Lys | Asp | Ala | Met | Glu | Ala | Lys | Lys | Ile | Glu |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Leu | Glu | Gly | Arg | Leu | Gly | Ala | Leu | Glu | Lys | Glu | Tyr | Glu | Glu | Leu | Leu |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Asp | Lys | Thr | Ile | Ala | Glu | Glu | Glu | Ala | Asn | Met | Gln | Asn | Ala | Asp | Val |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Asp | Asn | Leu | Ser | Ala | Leu | Lys | Thr | Lys | Leu | Glu | Ala | Gln | Tyr | Ala | Glu |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Lys | Lys | Glu | Val | Gln | Gln | Lys | Glu | Ile | Asp | Asp | Leu | Lys | Arg | Glu | Leu |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Asp | Arg | Lys | Gln | Ser | Gly | His | Glu | Lys | Leu | Ser | Ala | Ala | Met | Thr | Asp |
| | 690 | | | | | 695 | | | | | 700 | | | | |
| Leu | Arg | Ala | Ala | Asn | Asp | Gln | Leu | Gln | Ala | Ala | Leu | Ser | Glu | Gln | Pro |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
| Phe | Gln | Ala | Pro | Gln | Asp | Asn | Ser | Asp | Met | Thr | Glu | Lys | Glu | Lys | Asp |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Ile | Glu | Arg | Thr | Arg | Lys | Ser | Met | Ala | Gln | Gln | Leu | Ala | Asp | Phe | Glu |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Val | Met | Lys | Lys | Ala | Leu | Met | Arg | Asp | Leu | Gln | Asn | Arg | Cys | Glu | Lys |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Val | Val | Glu | Leu | Glu | Met | Ser | Leu | Asp | Glu | Thr | Arg | Glu | Gln | Tyr | Asn |
| | | 770 | | | | 775 | | | | | 780 | | | | |
| Asn | Val | Leu | Arg | Ala | Ser | Asn | Asn | Lys | Ala | Gln | Gln | Lys | Lys | Met | Ala |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Phe | Leu | Glu | Arg | Asn | Leu | Glu | Gln | Leu | Thr | Asn | Val | Gln | Lys | Gln | Leu |
| | | | | 805 | | | | | 810 | | | | | 815 | |
| Val | Glu | Gln | Asn | Ala | Ser | Leu | Lys | Lys | Glu | Val | Ala | Leu | Ala | Glu | Arg |
| | | | 820 | | | | | 825 | | | | | 830 | | |
| Lys | Leu | Ile | Ala | Arg | Asn | Glu | Arg | Ile | Gln | Ser | Leu | Glu | Thr | Leu | Leu |
| | | 835 | | | | | 840 | | | | | 845 | | | |
| His | Asn | Ala | Gln | Asp | Lys | Leu | Leu | Asn | Gln | Asn | Lys | Lys | Phe | Glu | Gln |
| | 850 | | | | | 855 | | | | | 860 | | | | |
| Gln | Leu | Ala | Thr | Val | Arg | Glu | Arg | Leu | Glu | Gln | Ala | Arg | Ser | Gln | Lys |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 |
| Ser | Gln | Asn | Ser | Leu | Ala | Ala | Leu | Asn | Phe | Ser | Arg | Ile | Ala | Lys | Pro |
| | | | | 885 | | | | | 890 | | | | | 895 | |
| Leu | Arg | Gly | Asn | Gly | Ala | Ala | Ile | Asp | Asn | Gly | Ser | Asp | Asp | Gly | Ser |
| | | | 900 | | | | | 905 | | | | | 910 | | |
| Leu | Pro | Thr | Ser | Pro | Thr | Asp | Lys | Arg | Asp | Lys | Arg | Ser | Ser | Trp | Met |
| | | 915 | | | | | 920 | | | | | 925 | | | |
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 <212> PRT
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 Ile Phe Gln Gly Asp Asp Ser Val Val Ile Gly Gly Lys Pro Tyr Val

| | | | | |
|-------------------------------------|-----------------------------|-------------------------|------|-----|
| 530 | | 535 | | 540 |
| Lys Arg Ile Ala Glu Val | Leu Asn Gly Leu Met | Lys Asp Leu Ser Glu | | |
| 545 | 550 | 555 | 560 | |
| Phe Ser Val Ile Val | Gly Asn Gly Glu Ile | Lys Leu Pro Val Glu Ile | | |
| | 565 | 570 | 575 | |
| Ser Gly Ala Ile Glu Glu Glu Phe Thr | Val Ala Arg Leu Tyr Ile Ser | | | |
| | 580 | 585 | 590 | |
| Lys Ile Lys Ser Glu Val Lys Ser Val | Val Lys Arg Cys Arg Gln Leu | | | |
| | 595 | 600 | 605 | |
| Glu Asn Leu Gln Val Glu Cys His Arg | Lys Met Glu Val Thr Gly Arg | | | |
| | 610 | 615 | 620 | |
| Glu Leu Ser Ser Cys Gln Leu Leu Ile | Ser Gln His Glu Ala Lys Ile | | | |
| 625 | 630 | 635 | 640 | |
| Arg Ser Leu Thr Glu Tyr Met Gln Ser | Val Glu Leu Lys Lys Arg His | | | |
| | 645 | 650 | 655 | |
| Leu Glu Glu Ser Tyr Asp Ser Leu Ser | Asp Glu Leu Ala Lys Leu Gln | | | |
| | 660 | 665 | 670 | |
| Ala Gln Glu Thr Val His Glu Val Ala | Leu Lys Asp Lys Glu Pro Asp | | | |
| | 675 | 680 | 685 | |
| Thr Gln Asp Ala Asp Glu Val Lys Lys | Ala Leu Glu Leu Gln Met Glu | | | |
| | 690 | 695 | 700 | |
| Ser His Arg Glu Ala His His Arg Gln | Leu Ala Arg Leu Arg Asp Glu | | | |
| 705 | 710 | 715 | 720 | |
| Ile Asn Glu Lys Gln Lys Thr Ile Asp | Glu Leu Lys Asp Leu Asn Gln | | | |
| | 725 | 730 | 735 | |
| Lys Leu Gln Leu Glu Leu Glu Lys Leu | Gln Ala Asp Tyr Glu Lys Leu | | | |
| | 740 | 745 | 750 | |
| Lys Ser Glu Glu His Glu Lys Ser Thr | Lys Leu Gln Glu Leu Thr Phe | | | |
| | 755 | 760 | 765 | |
| Leu Tyr Glu Arg His Glu Gln Ser Lys | Gln Asp Leu Lys Gly Leu Glu | | | |
| | 770 | 775 | 780 | |
| Glu Thr Val Ala Arg Glu Leu Gln Thr | Leu His Asn Leu Arg Lys Leu | | | |
| 785 | 790 | 795 | 800 | |
| Phe Val Gln Asp Val Thr Thr Arg Val | Lys Lys Ser Ala Glu Met Glu | | | |
| | 805 | 810 | 815 | |
| Pro Glu Asp Ser Gly Gly Ile His Ser | Gln Lys Gln Lys Ile Ser Phe | | | |
| | 820 | 825 | 830 | |
| Leu Glu Asn Asn Leu Glu Gln Leu Thr | Lys Val His Lys Gln Leu Val | | | |
| | 835 | 840 | 845 | |
| Arg Asp Asn Ala Asp Leu Arg Cys Glu | Leu Pro Lys Leu Glu Lys Arg | | | |
| | 850 | 855 | 860 | |
| Leu Arg Ala Thr Ala Glu Arg Val Lys | Ala Leu Glu Gly Ala Leu Lys | | | |
| 865 | 870 | 875 | 880 | |
| Glu Ala Lys Glu Gly Ala Met Lys Asp | Lys Arg Arg Tyr Gln Gln Glu | | | |
| | 885 | 890 | 895 | |
| Val Asp Arg Ile Lys Glu Ala Val Arg | Tyr Lys Ser Ser Gly Lys Arg | | | |
| | 900 | 905 | 910 | |
| Ala His Ser Ala Gln Ile Ala Lys Pro | Val Arg Pro Gly His Tyr Pro | | | |
| | 915 | 920 | 925 | |
| Ala Ser Ser Pro Thr Asn Pro Tyr Gly | Thr Arg Ser Pro Glu Cys Ile | | | |
| | 930 | 935 | 940 | |
| Ser Tyr Thr Asn Ser Leu Phe Gln Asn | Tyr Gln Asn Leu Tyr Leu Gln | | | |
| 945 | 950 | 955 | 960 | |
| Ala Thr Pro Ser Ser Thr Ser Asp Met | Tyr Phe Ala Asn Ser Cys Thr | | | |
| | 965 | 970 | 975 | |
| Ser Ser Gly Ala Thr Ser Ser Gly Gly | Pro Leu Ala Ser Tyr Gln Lys | | | |
| | 980 | 985 | 990 | |
| Ala Asn Met Asp Asn Gly Asn Ala Thr | Asp Ile Asn Asp Asn Arg Ser | | | |
| | 995 | 1000 | 1005 | |
| Asp Leu Pro Cys Gly Tyr Glu Ala Glu | Asp Gln Ala Lys Leu Phe Pro | | | |
| 1010 | 1015 | 1020 | | |
| Leu His Gln Glu Thr Ala Ala Ser | | | | |

1025

1030

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<211> 1027

<212> PRT

<213> Mus musculus

<400> 27

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Arg | Pro | Leu | Asn | Gln | Ala | Glu | Ile | Leu | Arg | Gly | Asp | Lys | Phe | Ile | Pro | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Ile | Phe | Gln | Gly | Asp | Asp | Ser | Val | Ile | Ile | Gly | Gly | Lys | Pro | Tyr | Val | |
| | 35 | | | | | 40 | | | | | | 45 | | | | |
| Phe | Asp | Arg | Val | Phe | Pro | Pro | Asn | Thr | Thr | Gln | Glu | Gln | Val | Tyr | His | |
| 50 | | | | | | 55 | | | | | 60 | | | | | |
| Ala | Cys | Ala | Met | Gln | Ile | Val | Lys | Asp | Val | Leu | Ala | Gly | Tyr | Asn | Gly | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| Thr | Ile | Phe | Ala | Tyr | Gly | Gln | Thr | Ser | Ser | Gly | Lys | Thr | His | Thr | Met | |
| | | | | 85 | | | | 90 | | | | | | 95 | | |
| Glu | Gly | Lys | Leu | His | Asp | Pro | Gln | Leu | Met | Gly | Ile | Ile | Pro | Arg | Ile | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Ala | Arg | Asp | Ile | Phe | Asn | His | Ile | Tyr | Ser | Met | Asp | Glu | Asn | Leu | Glu | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| Phe | His | Ile | Lys | Val | Ser | Tyr | Phe | Glu | Ile | Tyr | Leu | Asp | Lys | Ile | Arg | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Asp | Leu | Leu | Asp | Val | Thr | Lys | Thr | Asn | Leu | Ser | Val | His | Glu | Asp | Lys | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Asn | Arg | Val | Pro | Phe | Val | Lys | Gly | Cys | Thr | Glu | Arg | Phe | Val | Ser | Ser | |
| | | | | 165 | | | | 170 | | | | | | 175 | | |
| Pro | Glu | Glu | Ile | Leu | Asp | Val | Ile | Asp | Glu | Gly | Lys | Ser | Asn | Arg | His | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Val | Ala | Val | Thr | Asn | Met | Asn | Glu | His | Ser | Ser | Arg | Ser | His | Ser | Ile | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Phe | Leu | Ile | Asn | Ile | Lys | Gln | Glu | Asn | Val | Glu | Thr | Glu | Gln | Lys | Leu | |
| | 210 | | | | | 215 | | | | 220 | | | | | | |
| Ser | Gly | Lys | Leu | Tyr | Leu | Val | Asp | Leu | Ala | Gly | Ser | Glu | Lys | Val | Ser | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Thr | Gly | Ala | Glu | Gly | Ala | Val | Leu | Asp | Glu | Ala | Lys | Asn | Ile | Asn | |
| | | | | 245 | | | | 250 | | | | | | 255 | | |
| Lys | Ser | Leu | Ser | Ala | Leu | Gly | Asn | Val | Ile | Ser | Ala | Leu | Ala | Glu | Gly | |
| | | | 260 | | | | 265 | | | | | | 270 | | | |
| Thr | Lys | Ser | Tyr | Val | Pro | Tyr | Arg | Asp | Thr | Lys | Met | Thr | Arg | Ile | Leu | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| Gln | Asp | Ser | Leu | Gly | Gly | Asn | Cys | Arg | Thr | Thr | Met | Phe | Ile | Cys | Cys | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Pro | Ser | Ser | Tyr | Asn | Asp | Ala | Glu | Thr | Lys | Ser | Thr | Leu | Met | Phe | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Gly | Gln | Arg | Ala | Lys | Thr | Ile | Lys | Asn | Thr | Ala | Ser | Val | Asn | Leu | Glu | |
| | | | | 325 | | | | | 330 | | | | | 335 | | |
| Leu | Thr | Ala | Glu | Gln | Trp | Lys | Lys | Lys | Tyr | Glu | Lys | Glu | Lys | Glu | Lys | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
| Thr | Lys | Ala | Gln | Lys | Glu | Thr | Ile | Ala | Asn | Val | Glu | Ala | Glu | Leu | Ser | |
| | | 355 | | | | | 360 | | | | | 365 | | | | |
| Arg | Trp | Arg | Asn | Gly | Glu | Asn | Val | Pro | Glu | Thr | Glu | Arg | Leu | Ala | Gly | |
| | 370 | | | | | 375 | | | | | 380 | | | | | |
| Glu | Asp | Ser | Ala | Leu | Gly | Ala | Glu | Leu | Cys | Glu | Glu | Thr | Pro | Val | Asn | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Asp | Asn | Ser | Ser | Ile | Val | Val | Arg | Ile | Ala | Pro | Glu | Glu | Arg | Gln | Lys | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| Tyr | Glu | Glu | Glu | Ile | Arg | Arg | Leu | Tyr | Lys | Gln | Leu | Asp | Asp | Lys | Asp | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Glu | Ile | Asn | Gln | Gln | Ser | Gln | Leu | Ile | Glu | Lys | Leu | Lys | Gln | Gln | |
| | | 435 | | | | | 440 | | | | | 445 | | | | |
| Met | Leu | Asp | Gln | Glu | Glu | Leu | Leu | Val | Ser | Thr | Arg | Gly | Asp | Asn | Glu | |
| | 450 | | | | | 455 | | | | | 460 | | | | | |
| Lys | Val | Gln | Arg | Glu | Leu | Ser | His | Leu | Gln | Ser | Glu | Asn | Asp | Ala | Ala | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Asp | Glu | Val | Lys | Glu | Val | Leu | Gln | Ala | Leu | Glu | Glu | Leu | Ala | Val | |
| | | | | 485 | | | | | 490 | | | | | | 495 | |
| Asn | Tyr | Asp | Gln | Lys | Ser | Gln | Glu | Val | Glu | Glu | Lys | Ser | Gln | Gln | Asn | |
| | | | 500 | | | | | 505 | | | | | 510 | | | |
| Gln | Leu | Leu | Val | Asp | Glu | Leu | Ser | Gln | Lys | Val | Ala | Thr | Met | Leu | Ser | |
| | | | 515 | | | | 520 | | | | | 525 | | | | |
| Leu | Glu | Ser | Glu | Leu | Gln | Arg | Leu | Gln | Glu | Val | Ser | Gly | His | Gln | Arg | |
| | 530 | | | | | 535 | | | | | 540 | | | | | |
| Lys | Arg | Ile | Ala | Glu | Val | Leu | Asn | Gly | Leu | Met | Arg | Asp | Leu | Ser | Glu | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | |
| Phe | Ser | Val | Ile | Val | Gly | Asn | Gly | Glu | Ile | Lys | Leu | Pro | Val | Glu | Ile | |
| | | | | 565 | | | | | 570 | | | | | 575 | | |
| Ser | Gly | Ala | Ile | Glu | Glu | Glu | Phe | Thr | Val | Ala | Arg | Leu | Tyr | Ile | Ser | |
| | | | 580 | | | | | 585 | | | | | 590 | | | |
| Lys | Ile | Lys | Ser | Glu | Val | Lys | Ser | Val | Val | Lys | Arg | Cys | Arg | Gln | Leu | |
| | | 595 | | | | | 600 | | | | | 605 | | | | |
| Glu | Asn | Leu | Gln | Val | Glu | Cys | His | Arg | Lys | Met | Glu | Val | Thr | Gly | Arg | |
| | 610 | | | | | 615 | | | | | 620 | | | | | |
| Glu | Leu | Ser | Ser | Cys | Gln | Leu | Leu | Ile | Ser | Gln | His | Glu | Ala | Lys | Ile | |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 | |
| Arg | Ser | Leu | Thr | Glu | Tyr | Met | Gln | Thr | Val | Glu | Leu | Lys | Lys | Arg | His | |
| | | | | 645 | | | | | 650 | | | | | 655 | | |
| Leu | Glu | Glu | Ser | Tyr | Asp | Ser | Leu | Ser | Asp | Glu | Leu | Ala | Arg | Leu | Gln | |
| | | | | 660 | | | | 665 | | | | | 670 | | | |
| Ala | His | Glu | Thr | Val | His | Glu | Val | Ala | Leu | Lys | Asp | Lys | Glu | Pro | Asp | |
| | | 675 | | | | | 680 | | | | | 685 | | | | |
| Thr | Gln | Asp | Ala | Glu | Glu | Val | Lys | Lys | Ala | Leu | Glu | Leu | Gln | Met | Glu | |
| | 690 | | | | | 695 | | | | | 700 | | | | | |
| Asn | His | Arg | Glu | Ala | His | His | Arg | Gln | Leu | Ala | Arg | Leu | Arg | Asp | Glu | |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 | |
| Ile | Asn | Glu | Lys | Gln | Lys | Thr | Ile | Asp | Glu | Leu | Lys | Asp | Leu | Asn | Gln | |
| | | | | 725 | | | | | 730 | | | | | 735 | | |
| Lys | Leu | Gln | Leu | Glu | Leu | Glu | Lys | Leu | Gln | Ala | Asp | Tyr | Glu | Arg | Leu | |
| | | | 740 | | | | | 745 | | | | | 750 | | | |
| Lys | Asn | Glu | Glu | Asn | Glu | Lys | Ser | Ala | Lys | Leu | Gln | Glu | Leu | Thr | Phe | |
| | | 755 | | | | | 760 | | | | | 765 | | | | |
| Leu | Tyr | Glu | Arg | His | Glu | Gln | Ser | Lys | Gln | Asp | Leu | Lys | Gly | Leu | Glu | |
| | 770 | | | | | 775 | | | | | 780 | | | | | |
| Glu | Thr | Val | Ala | Arg | Glu | Leu | Gln | Thr | Leu | His | Asn | Leu | Arg | Lys | Leu | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | |
| Phe | Val | Gln | Asp | Val | Thr | Thr | Arg | Val | Lys | Lys | Ser | Ala | Glu | Met | Glu | |
| | | | | 805 | | | | | 810 | | | | | 815 | | |
| Pro | Glu | Asp | Ser | Gly | Gly | Ile | His | Ser | Gln | Lys | Gln | Lys | Ile | Ser | Phe | |
| | | | 820 | | | | | 825 | | | | | 830 | | | |
| Leu | Glu | Asn | Asn | Leu | Glu | Gln | Leu | Thr | Lys | Val | His | Lys | Gln | Leu | Val | |
| | | 835 | | | | | 840 | | | | | 845 | | | | |
| Arg | Asp | Asn | Ala | Asp | Leu | Arg | Cys | Glu | Leu | Pro | Lys | Leu | Glu | Lys | Arg | |
| | 850 | | | | | 855 | | | | | 860 | | | | | |
| Leu | Arg | Ala | Thr | Ala | Glu | Arg | Val | Lys | Ala | Leu | Glu | Gly | Ala | Leu | Lys | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | |
| Glu | Ala | Lys | Glu | Gly | Ala | Met | Lys | Asp | Lys | Arg | Arg | Tyr | Gln | Gln | Glu | |
| | | | | 885 | | | | | 890 | | | | | 895 | | |
| Val | Asp | Arg | Ile | Lys | Glu | Ala | Val | Arg | Tyr | Lys | Ser | Ser | Gly | Lys | Arg | |
| | | | 900 | | | | | 905 | | | | | 910 | | | |
| Gly | His | Ser | Ala | Gln | Ile | Ala | Lys | Pro | Val | Arg | Pro | Gly | His | Tyr | Pro | |
| | | 915 | | | | | 920 | | | | | 925 | | | | |

Ala Ser Ser Pro Thr Asn Pro Tyr Gly Thr Arg Ser Pro Glu Cys Ile
930 935 940
Ser Tyr Thr Asn Asn Leu Phe Gln Asn Tyr Gln Asn Leu His Leu Gln
945 950 955 960
Ala Ala Pro Ser Ser Thr Ser Asp Met Tyr Phe Ala Ser Ser Gly Arg
965 970 975
Thr Ser Val Ala Pro Leu Ala Ser Tyr Gln Lys Ala Asn Met Asp Asn
980 985 990
Gly Asn Ala Thr Asp Ile Asn Asp Asn Arg Ser Asp Leu Pro Cys Gly
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Tyr Glu Ala Glu Asp Gln Ala Lys Leu Phe Pro Leu His Gln Glu Thr
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<400> 28

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Gly Met His Thr Leu Thr Pro Pro Thr Cys Asn Asn Gly Ala Ala Thr
35 40 45
Ser Asp Ser Asn Ile His Val Tyr Val Arg Cys Arg Ser Arg Asn Lys
50 55 60
Arg Glu Ile Glu Glu Lys Ser Ser Val Val Ile Ser Thr Leu Gly Pro
65 70 75 80
Gln Gly Lys Glu Ile Ile Leu Ser Asn Gly Ser His Gln Ser Tyr Ser
85 90 95
Ser Ser Lys Lys Thr Tyr Gln Phe Asp Gln Val Phe Gly Ala Glu Ser
100 105 110
Asp Gln Glu Thr Val Phe Asn Ala Thr Ala Lys Asn Tyr Ile Lys Glu
115 120 125
Met Leu His Gly Tyr Asn Cys Thr Ile Phe Ala Tyr Gly Gln Thr Gly
130 135 140
Thr Gly Lys Thr Tyr Thr Met Ser Gly Asp Ile Asn Ile Leu Gly Asp
145 150 155 160
Val Gln Ser Thr Asp Asn Leu Leu Leu Gly Glu His Ala Gly Ile Ile
165 170 175
Pro Arg Val Leu Val Asp Leu Phe Lys Glu Leu Ser Ser Leu Asn Lys
180 185 190
Glu Tyr Ser Val Lys Ile Ser Phe Leu Glu Leu Tyr Asn Glu Asn Leu
195 200 205
Lys Asp Leu Leu Ser Asp Ser Glu Asp Asp Asp Pro Ala Val Asn Asp
210 215 220
Pro Lys Arg Gln Ile Arg Ile Phe Asp Asn Asn Asn Asn Ser Ser
225 230 235 240
Ile Met Val Lys Gly Met Gln Glu Ile Phe Ile Asn Ser Ala His Glu
245 250 255
Gly Leu Asn Leu Leu Met Gln Gly Ser Leu Lys Arg Lys Val Ala Ala
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Thr Lys Cys Asn Asp Leu Ser Ser Arg Ser His Thr Val Phe Thr Ile
275 280 285
Thr Thr Asn Ile Val Glu Gln Asp Ser Lys Asp His Gly Gln Asn Lys
290 295 300
Asn Phe Val Lys Ile Gly Lys Leu Asn Leu Val Asp Leu Ala Gly Ser
305 310 315 320
Glu Asn Ile Asn Arg Ser Gly Ala Glu Asn Lys Arg Ala Gln Glu Ala

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 325 | | | | | 330 | | | | 335 | | | | |
| Gly | Leu | Ile | Asn | Lys | Ser | Leu | Leu | Thr | Leu | Gly | Arg | Val | Ile | Asn | Ala | | |
| | | | 340 | | | | | 345 | | | | | 350 | | | | |
| Leu | Val | Asp | His | Ser | Asn | His | Ile | Pro | Tyr | Arg | Glu | Ser | Lys | Leu | Thr | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | |
| Arg | Leu | Leu | Gln | Asp | Ser | Leu | Gly | Gly | Met | Thr | Lys | Thr | Cys | Ile | Ile | | |
| | 370 | | | | | 375 | | | | | 380 | | | | | | |
| Ala | Thr | Ile | Ser | Pro | Ala | Lys | Ile | Ser | Met | Glu | Thr | Ala | Ser | Thr | | | |
| | 385 | | | | 390 | | | | | 395 | | | | 400 | | | |
| Leu | Glu | Tyr | Ala | Thr | Arg | Ala | Lys | Ser | Ile | Lys | Asn | Thr | Pro | Gln | Val | | |
| | | | 405 | | | | | | 410 | | | | | 415 | | | |
| Asn | Gln | Ser | Leu | Ser | Lys | Asp | Thr | Cys | Leu | Lys | Asp | Tyr | Ile | Gln | Glu | | |
| | | 420 | | | | | 425 | | | | | | 430 | | | | |
| Ile | Glu | Lys | Leu | Arg | Asn | Asp | Leu | Lys | Asn | Ser | Arg | Asn | Lys | Gln | Gly | | |
| | 435 | | | | | | 440 | | | | | 445 | | | | | |
| Ile | Phe | Ile | Thr | Gln | Asp | Gln | Leu | Asp | Leu | Tyr | Glu | Ser | Asn | Ser | Ile | | |
| | 450 | | | | | 455 | | | | | 460 | | | | | | |
| Leu | Ile | Asp | Glu | Gln | Asn | Leu | Lys | Ile | His | Asn | Leu | Arg | Glu | Gln | Ile | | |
| | 465 | | | | 470 | | | | | 475 | | | | 480 | | | |
| Lys | Lys | Phe | Lys | Glu | Asn | Tyr | Leu | Asn | Gln | Leu | Asp | Ile | Asn | Asn | Leu | | |
| | | | 485 | | | | | | 490 | | | | | 495 | | | |
| Leu | Gln | Ser | Glu | Lys | Glu | Lys | Leu | Ile | Ala | Ile | Ile | Gln | Asn | Phe | Asn | | |
| | | 500 | | | | | | 505 | | | | | 510 | | | | |
| Val | Asp | Phe | Ser | Asn | Phe | Tyr | Ser | Glu | Ile | Gln | Lys | Ile | His | His | Thr | | |
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| Asn | Leu | Glu | Leu | Met | Asn | Glu | Val | Ile | Gln | Gln | Arg | Asp | Phe | Ser | Leu | | |
| | 530 | | | | 535 | | | | | | 540 | | | | | | |
| Glu | Asn | Ser | Gln | Lys | Gln | Tyr | Asn | Thr | Asn | Gln | Asn | Met | Gln | Leu | Lys | | |
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| Ile | Ser | Gln | Gln | Val | Leu | Gln | Thr | Leu | Asn | Thr | Leu | Gln | Gly | Ser | Leu | | |
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| Asn | Asn | Tyr | Asn | Ser | Lys | Cys | Ser | Glu | Val | Ile | Lys | Gly | Val | Thr | Glu | | |
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| Glu | Leu | Thr | Arg | Asn | Val | Asn | Thr | His | Lys | Ala | Lys | His | Asp | Ser | Thr | | |
| | 595 | | | | | | 600 | | | | | 605 | | | | | |
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| Asp | Ser | Thr | Ser | His | Tyr | Arg | Lys | Asp | Leu | Asn | Glu | Ile | Tyr | Gln | Ser | | |
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| Asp | Ser | Ile | Gly | Ser | Ser | Ile | Leu | Thr | Ser | Ile | Asn | Glu | Ile | Ser | Gln | | |
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| Asn | Cys | Thr | Thr | Asn | Leu | Asn | Ser | Met | Asn | Val | Leu | Ile | Glu | Asn | Gln | | |
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| Gln | Ser | Gly | Ser | Ser | Lys | Leu | Ile | Lys | Glu | Gln | Asp | Leu | Glu | Ile | Lys | | |
| | 705 | | | | 710 | | | | 715 | | | | | 720 | | | |
| Lys | Leu | Lys | Asn | Asp | Leu | Ile | Asn | Glu | Arg | Arg | Ile | Ser | Asn | Gln | Phe | | |
| | | | 725 | | | | | 730 | | | | | | 735 | | | |
| Asn | Gln | Gln | Leu | Ala | Glu | Met | Lys | Arg | Tyr | Phe | Gln | Asp | His | Val | Ser | | |
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| Arg | Thr | Arg | Ser | Glu | Phe | His | Asp | Glu | Leu | Asn | Lys | Cys | Ile | Asp | Asn | | |
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| Leu | Lys | Asp | Lys | Gln | Ser | Lys | Leu | Asp | Gln | Asp | Ile | Trp | Gln | Lys | Thr | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| Ala | Ser | Ile | Phe | Asn | Glu | Thr | Asp | Ile | Val | Val | Asn | Lys | Ile | His | Ser | | |
| | 785 | | | | 790 | | | | 795 | | | | | 800 | | | |
| Asp | Ser | Ile | Ala | Ser | Leu | Ala | His | Asn | Ala | Glu | Asn | Thr | Leu | Lys | Thr | | |
| | | | 805 | | | | | 810 | | | | | 815 | | | | |
| Val | Ser | Gln | Asn | Asn | Glu | Ser | Phe | Thr | Asn | Asp | Leu | Ile | Ser | Leu | Ser | | |

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| Arg | Gly | Met | 820 | Met | Asp | Ile | Ser | 825 | Lys | Leu | Arg | Ser | 830 | Leu | Pro | Ile |
| | | 835 | | | | | 840 | | | | | 845 | | | | |
| Asn | Glu | Phe | Leu | Asn | Lys | Ile | Ser | Gln | Thr | Ile | Cys | Glu | Thr | Cys | Gly | |
| | 850 | | | | | 855 | | | | | 860 | | | | | |
| Asp | Asp | Asn | Thr | Ile | Ala | Ser | Asn | Pro | Val | Leu | Thr | Ser | Ile | Lys | Lys | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | |
| Phe | Gln | Asn | Ile | Ile | Cys | Ser | Asp | Ile | Ala | Leu | Thr | Asn | Glu | Lys | Ile | |
| | | | | 885 | | | | | 890 | | | | | 895 | | |
| Met | Ser | Leu | Ile | Asp | Glu | Ile | Gln | Ser | Gln | Ile | Glu | Thr | Ile | Ser | Asn | |
| | | 900 | | | | | 905 | | | | | | 910 | | | |
| Glu | Asn | Asn | Ile | Asn | Leu | Ile | Ala | Ile | Asn | Glu | Asn | Phe | Asn | Ser | Leu | |
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| Cys | Asn | Phe | Ile | Leu | Thr | Asp | Tyr | Asp | Glu | Asn | Ile | Met | Gln | Ile | Ser | |
| | 930 | | | | | 935 | | | | | 940 | | | | | |
| Lys | Thr | Gln | Asp | Glu | Val | Leu | Ser | Glu | His | Cys | Glu | Lys | Leu | Gln | Ser | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | |
| Leu | Lys | Ile | Leu | Gly | Met | Asp | Ile | Phe | Thr | Ala | His | Ser | Ile | Glu | Lys | |
| | | | | 965 | | | | 970 | | | | | | 975 | | |
| Pro | Leu | His | Glu | His | Thr | Arg | Pro | Glu | Ala | Ser | Val | Ile | Lys | Ala | Leu | |
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| Pro | Leu | Leu | Asp | Tyr | Pro | Lys | Gln | Phe | Gln | Ile | Tyr | Arg | Asp | Ala | Glu | |
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| Leu | Ser | Thr | Asn | Glu | Asn | Phe | Pro | Leu | Ser | Gln | Phe | Ser | Pro | Lys | Thr | |
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| Pro | Val | Pro | Val | Pro | Asp | Gln | Pro | Leu | Pro | Lys | Val | Leu | Ile | Pro | Lys | |
| | | | | 1045 | | | | | 1050 | | | | | 1055 | | |
| Ser | Ile | Asn | Ser | Ala | Lys | Ser | Asn | Arg | Ser | Lys | Thr | Leu | Pro | Asn | Thr | |
| | | 1060 | | | | | 1065 | | | | | | 1070 | | | |
| Glu | Gly | Thr | Gly | Arg | Glu | Ser | Gln | Asn | Asn | Leu | Lys | Arg | Arg | Phe | Thr | |
| | 1075 | | | | | | 1080 | | | | | 1085 | | | | |
| Thr | Glu | Pro | Ile | Leu | Lys | Gly | Glu | Glu | Thr | Glu | Asn | Asn | Asp | Ile | Leu | |
| | 1090 | | | | | 1095 | | | | | 1100 | | | | | |
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| Leu | Arg | Ser | Val | Ser | Ala | Lys | Ser | Asp | Pro | Phe | Leu | His | Pro | Gly | Arg | |
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| Ile | Arg | Ile | Arg | Arg | Ser | Asp | Ser | Ile | Asn | Asn | Asn | Ser | Arg | Lys | Asn | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Thr | Tyr | Thr | Gly | Ser | Ile | Thr | Val | Thr | Ile | Arg | Pro | Lys | Pro | Arg | |
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| Ser | Val | Gly | Thr | Ser | Arg | Asp | His | Val | Gly | Leu | Lys | Ser | Pro | Arg | Tyr | |
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| Ser | Gln | Pro | Arg | Ser | Asn | Ser | His | His | Gly | Ser | Asn | Thr | Phe | Val | Arg | |
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| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Gly | Glu | Phe | Lys | Phe | Asp | His | Val | Phe | Ala | Ser | His | Cys | Thr | Asn | Leu |
| | | | | 165 | | | | | 170 | | | | | | 175 |
| Glu | Val | Tyr | Glu | Arg | Thr | Ser | Lys | Pro | Met | Ile | Asp | Lys | Leu | Leu | Met |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Phe | Asn | Ala | Thr | Ile | Phe | Ala | Tyr | Gly | Met | Thr | Gly | Ser | Gly | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Thr | Phe | Thr | Met | Ser | Gly | Asn | Glu | Gln | Glu | Leu | Gly | Leu | Ile | Pro | Leu |
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| Ser | Val | Ser | Tyr | Leu | Phe | Thr | Asn | Ile | Met | Glu | Gln | Ser | Met | Asn | Gly |
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| Asp | Lys | Lys | Phe | Asp | Val | Ile | Ile | Ser | Tyr | Leu | Glu | Ile | Tyr | Asn | Glu |
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| Arg | Ile | Tyr | Asp | Leu | Leu | Glu | Ser | Gly | Leu | Glu | Glu | Ser | Gly | Ser | Arg |
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| Ile | Ser | Thr | Pro | Ser | Arg | Leu | Tyr | Met | Ser | Lys | Ser | Asn | Ser | Asn | Gly |
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| Leu | Gly | Val | Glu | Leu | Lys | Ile | Arg | Asp | Asp | Ser | Gln | Tyr | Gly | Val | Lys |
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| Val | Ile | Gly | Leu | Thr | Glu | Arg | Arg | Cys | Glu | Ser | Ser | Glu | Glu | Leu | Leu |
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| Arg | Trp | Ile | Ala | Val | Gly | Asp | Lys | Ser | Arg | Lys | Ile | Gly | Glu | Thr | Asp |
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| Tyr | Asn | Ala | Arg | Ser | Ser | Arg | Ser | His | Ala | Ile | Val | Leu | Ile | Arg | Leu |
| | | 340 | | | | | | 345 | | | | | 350 | | |
| Thr | Ser | Thr | Asn | Val | Lys | Asn | Gly | Thr | Ser | Arg | Ser | Ser | Thr | Leu | Ser |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Leu | Cys | Asp | Leu | Ala | Gly | Ser | Glu | Arg | Ala | Thr | Gly | Gln | Gln | Glu | Arg |
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| Arg | Lys | Glu | Gly | Ser | Phe | Ile | Asn | Lys | Ser | Leu | Leu | Ala | Leu | Gly | Thr |
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| Val | Ile | Ser | Lys | Leu | Ser | Ala | Asp | Lys | Met | Asn | Ser | Val | Gly | Ser | Asn |
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| Ile | Pro | Ser | Pro | Ser | Ala | Ser | Gly | Ser | Ser | Ser | Ser | Ser | Gly | Asn | Ala |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Thr | Asn | Asn | Gly | Thr | Ser | Pro | Ser | Asn | His | Ile | Pro | Tyr | Arg | Asp | Ser |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Lys | Leu | Thr | Arg | Leu | Leu | Gln | Pro | Ala | Leu | Ser | Gly | Asp | Ser | Ile | Val |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Thr | Thr | Ile | Cys | Thr | Val | Asp | Thr | Arg | Asn | Asp | Ala | Ala | Ala | Glu | Thr |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Met | Asn | Thr | Leu | Arg | Phe | Ala | Ser | Arg | Ala | Lys | Asn | Val | Ala | Leu | His |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Val | Ser | Lys | Lys | Ser | Ile | Ile | Ser | Asn | Gly | Asn | Asn | Asp | Gly | Asp | Lys |
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| Asp | Arg | Thr | Ile | Glu | Leu | Leu | Arg | Arg | Gln | Leu | Glu | Glu | Gln | Arg | Arg |
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| Met | Ile | Ser | Glu | Leu | Lys | Asn | Arg | Ser | Asn | Ile | Gly | Glu | Pro | Leu | Thr |
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| Lys | Ser | Ser | Asn | Glu | Ser | Thr | Tyr | Lys | Asp | Ile | Lys | Ala | Thr | Gly | Asn |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Asp | Gly | Asp | Pro | Asn | Leu | Ala | Leu | Met | Arg | Ala | Glu | Asn | Arg | Val | Leu |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Lys | Tyr | Lys | Leu | Glu | Asn | Cys | Glu | Lys | Leu | Leu | Asp | Lys | Asp | Val | Val |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Asp | Leu | Gln | Asp | Ser | Glu | Ile | Met | Glu | Ile | Val | Glu | Met | Leu | Pro | Phe |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Glu | Val | Gly | Thr | Leu | Leu | Glu | Thr | Lys | Phe | Gln | Gly | Leu | Glu | Ser | Gln |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Ile | Arg | Gln | Tyr | Arg | Lys | Tyr | Thr | Gln | Lys | Leu | Glu | Asp | Lys | Ile | Met |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Glu | Lys | Ser | Gly | His | Thr | Ala | Met | Ser | Leu | Thr | Gly | Cys | Asp |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Gly | Thr | Glu | Val | Ile | Glu | Leu | Gln | Lys | Met | Leu | Glu | Arg | Lys | Asp | Lys |
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| Met | Ile | Glu | Ala | Leu | Gln | Ser | Ala | Lys | Arg | Leu | Arg | Asp | Arg | Ala | Leu |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Lys | Pro | Leu | Ile | Asn | Thr | Gln | Gln | Ser | Pro | His | Pro | Val | Val | Asp | Asn |
| | 690 | | | | | 695 | | | | | 700 | | | | |
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<400> 30

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| Gln | Gln | Gly | Leu | Glu | Ala | Leu | Arg | Glu | Glu | His | Ser | Thr | Ile | Ser | Asn |
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| Thr | Leu | Glu | Thr | Ser | Val | Lys | Gly | Val | Lys | Glu | Asp | Glu | Ala | Pro | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Pro | Lys | Gln | Lys | Leu | Ser | Gln | Ile | Asn | Asp | Asn | Leu | Asp | Lys | Leu | Val |
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| Cys | Gly | Val | Asp | Glu | Thr | Ser | Leu | Met | Leu | Met | Val | Phe | Gln | Leu | Thr |
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| Gln | Gly | Met | Asp | Ala | Gln | His | Gln | Lys | Tyr | Gln | Ala | Gln | Arg | Arg | Arg |
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| Leu | Cys | Gln | Glu | Asn | Ala | Trp | Leu | Arg | Asp | Glu | Leu | Ser | Ser | Thr | Gln |
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| Ile | Lys | Leu | Gln | Gln | Ser | Glu | Gln | Met | Val | Ala | Gln | Leu | Glu | Glu | Glu |
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| Asn | Lys | His | Leu | Lys | Tyr | Met | Ala | Ser | Ile | Lys | Gln | Leu | Asp | Asp | Gly |
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| Thr | Gln | Ser | Asp | Thr | Lys | Thr | Ser | Val | Asp | Val | Gly | Pro | Gln | Pro | Val |
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| Thr | Asn | Glu | Thr | Leu | Gln | Glu | Leu | Gly | Phe | Gly | Pro | Glu | Asp | Glu | Glu |
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| Ala | Ala | Ser | Ala | Asn | Val | Gly | Tyr | Glu | Ile | Pro | Ala | Arg | Leu | Arg | Thr |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Leu | His | Asn | Leu | Val | Ile | Gln | Tyr | Ala | Ser | Gln | Gly | Arg | Tyr | Glu | Val |
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| Ala | Val | Pro | Leu | Cys | Lys | Gln | Ala | Leu | Glu | Asp | Leu | Glu | Lys | Thr | Ser |
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| Gly | His | Asp | His | Pro | Asp | Val | Ala | Thr | Met | Leu | Asn | Ile | Leu | Ala | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Tyr | Arg | Asp | Gln | Asn | Lys | Tyr | Lys | Glu | Ala | Ala | Asn | Leu | Leu | Asn |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Ala | Leu | Ser | Ile | Arg | Glu | Lys | Cys | Leu | Gly | Glu | Ser | His | Pro | Ala |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Val | Ala | Ala | Thr | Leu | Asn | Asn | Leu | Ala | Val | Leu | Phe | Gly | Lys | Arg | Gly |
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| Lys | Phe | Lys | Asp | Ala | Glu | Pro | Leu | Cys | Lys | Arg | Ala | Leu | Glu | Ile | Arg |
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| Glu | Lys | Val | Leu | Gly | Asp | Asp | His | Pro | Asp | Val | Ala | Lys | Gln | Leu | Asn |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asn | Leu | Ala | Leu | Leu | Cys | Gln | Asn | Gln | Gly | Lys | Tyr | Glu | Glu | Val | Glu |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Lys | Tyr | Tyr | Lys | Arg | Ala | Leu | Glu | Ile | Tyr | Glu | Ser | Lys | Leu | Gly | Pro |

| | | | | | | | | | | | | | | | | | | |
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| 370 | Lys | Gln | Gly | Lys | Tyr | Lys | 375 | Glu | Ala | Glu | Glu | Leu | 380 | Tyr | Lys | Gln | Ile | |
| 385 | Thr | Arg | Ala | His | Glu | Arg | 390 | Glu | Phe | Gly | Gln | Ile | 395 | Ser | Gly | Glu | Asn | |
| 405 | Pro | Ile | Trp | Gln | Ile | Ala | 410 | Glu | Arg | Glu | Glu | Asn | 415 | Lys | His | Lys | | |
| 420 | Gly | Glu | Gly | Ala | Thr | Ala | 425 | Gln | Ala | Gly | Trp | Ala | 430 | Lys | Ala | Ala | | |
| 435 | Val | Asp | Ser | Pro | Thr | Val | 440 | Thr | Thr | Thr | Leu | Lys | 445 | Asn | Leu | Gly | Ala | |
| 450 | Tyr | Arg | Arg | Gln | Gly | Lys | 455 | Tyr | Glu | Ala | Ala | Glu | 460 | Thr | Leu | Glu | Asp | |
| 465 | Ala | Leu | Arg | Ala | Lys | Lys | 470 | Gln | His | Glu | Pro | Leu | 475 | Arg | Ser | Gly | Ala | |
| 485 | Gly | Gly | Ile | Asp | Glu | Met | 490 | Ser | Gln | Ser | Met | Met | 495 | Ala | Ser | Thr | Ile | |
| 500 | Gly | Gly | Ser | Arg | Asn | Ser | 505 | Thr | Thr | Ser | Thr | Ser | 510 | Gln | Thr | Gly | Leu | |
| 515 | Lys | Asn | Lys | Leu | Met | Asn | 520 | Leu | Gly | Phe | Asn | Ser | 525 | | | | | |
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<400> 31

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| Leu | Gln | Gly | Leu | Glu | Ala | Leu | Arg | Val | Glu | His | Val | Ser | Ile | Met | Asn |
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| Gly | Ile | Ala | Glu | Val | Gln | Lys | Asp | Asn | Glu | Lys | Ser | Asp | Met | Leu | Arg |
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| Met | Ala | Leu | Thr | Ser | His | Leu | Gln | Asn | Ile | Glu | Ala | Glu | Lys | His | Lys |
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| Leu | Lys | Thr | Gln | Val | Arg | Arg | Leu | His | Gln | Glu | Asn | Ala | Trp | Leu | Arg |
| 85 | | | | | | | | | 90 | | | | | 95 | |
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| Val | Ala | Gln | Leu | Glu | Glu | Glu | Lys | His | Leu | Glu | Phe | Met | Ala | Ser | |
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| Val | Lys | Lys | Tyr | Asp | Glu | Asn | Gln | Glu | Gln | Asp | Asp | Ala | Cys | Asp | Lys |
| 130 | | | | | | 135 | | | | | 140 | | | | |
| Ser | Arg | Thr | Asp | Pro | Val | Val | Glu | Leu | Phe | Pro | Asp | Glu | Glu | Asn | Glu |
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| Asp | Arg | His | Asn | Met | Ser | Pro | Thr | Pro | Pro | Ser | Gln | Phe | Ala | Asn | Gln |
| 165 | | | | | | | | | 170 | | | | | 175 | |
| Thr | Ser | Gly | Tyr | Glu | Ile | Pro | Ala | Arg | Leu | Arg | Thr | Leu | His | Asn | Leu |
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| Gln | Asn | Lys | Tyr | Lys | Glu | Ala | Ala | Asn | Leu | Leu | Asn | Asp | Ala | Leu | Ser |
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| | | | | | | | | | | | | | | | | |
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| Ile | Arg | Gly | Lys | Thr | Leu | Gly | Glu | Asn | His | Pro | Ala | Val | Ala | Ala | Thr | |
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| Leu | Asn | Asn | Leu | Ala | Val | Leu | Tyr | Gly | Lys | Arg | Gly | Lys | Tyr | Lys | Asp | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| Ala | Glu | Pro | Leu | Cys | Lys | Arg | Ala | Leu | Glu | Ile | Arg | Glu | Lys | Val | Leu | |
| | | 290 | | | | 295 | | | | | 300 | | | | | |
| Gly | Lys | Asp | His | Pro | Asp | Val | Ala | Lys | Gln | Leu | Asn | Asn | Leu | Ala | Leu | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Leu | Cys | Gln | Asn | Gln | Gly | Lys | Tyr | Asp | Glu | Val | Glu | Lys | Tyr | Tyr | Gln | |
| | | | | 325 | | | | | 330 | | | | | 335 | | |
| Arg | Ala | Leu | Asp | Ile | Tyr | Glu | Ser | Lys | Leu | Gly | Pro | Asp | Asp | Pro | Asn | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
| Val | Ala | Lys | Thr | Lys | Asn | Asn | Leu | Ala | Gly | Cys | Tyr | Leu | Lys | Gln | Gly | |
| | | 355 | | | | | 360 | | | | | 365 | | | | |
| Arg | Tyr | Thr | Glu | Ala | Glu | Ile | Leu | Tyr | Lys | Gln | Val | Leu | Thr | Arg | Ala | |
| | | 370 | | | | 375 | | | | | 380 | | | | | |
| His | Glu | Arg | Glu | Phe | Gly | Ala | Ile | Asp | Ser | Lys | Asn | Lys | Pro | Ile | Trp | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Gln | Val | Ala | Glu | Glu | Arg | Glu | Glu | His | Lys | Phe | Asp | Asn | Arg | Glu | Asn | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| Thr | Pro | Tyr | Gly | Glu | Tyr | Gly | Gly | Trp | His | Lys | Ala | Ala | Lys | Val | Asp | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |
| Ser | Pro | Thr | Val | Thr | Thr | Thr | Leu | Lys | Asn | Leu | Gly | Ala | Leu | Tyr | Arg | |
| | | 435 | | | | | 440 | | | | | 445 | | | | |
| Arg | Gln | Gly | Met | Phe | Glu | Ala | Ala | Glu | Thr | Leu | Glu | Asp | Cys | Ala | Met | |
| | | 450 | | | | 455 | | | | | 460 | | | | | |
| Arg | Ser | Lys | Lys | Glu | Ala | Tyr | Asp | Leu | Ala | Lys | Gln | Thr | Lys | Leu | Ser | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| Gln | Leu | Leu | Thr | Ser | Asn | Glu | Lys | Arg | Arg | Ser | Lys | Ala | Ile | Lys | Glu | |
| | | | | 485 | | | | 490 | | | | | | 495 | | |
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 <213> Loligo pealeii

<400> 32

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| Glu | Ile | Gly | Lys | Met | Thr | Ala | Leu | Ser | Gln | Glu | Glu | Ile | Ile | Ser | Asn | |
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| | | 35 | | | | | 40 | | | | | 45 | | | | |
| Gln | Ile | Leu | Asn | Ser | Leu | Leu | Thr | Ser | Met | Lys | Thr | Ile | Arg | Lys | Glu | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| Asn | Gly | Asp | Thr | Asn | Leu | Val | Glu | Glu | Lys | Ala | Asn | Ile | Leu | Lys | Lys | |
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| | | | 85 | | | | | 90 | | | | | | 95 | | |
| Ala | Leu | Ala | Asn | His | Leu | Gln | His | Thr | Glu | Ala | Glu | Lys | Gln | Lys | Leu | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
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| Glu | Leu | Ala | Asn | Thr | Gln | Gln | Lys | Leu | Gln | Met | Ser | Glu | Gln | Lys | Val | |
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| Ala | Thr | Ile | Glu | Glu | Glu | Lys | Lys | His | Leu | Glu | Phe | Met | Asn | Glu | Met | |
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| Lys | Lys | Tyr | Asp | Thr | Asn | Glu | Ala | Gln | Val | Asn | Glu | Glu | Lys | Glu | Ser | |
| | | | | 165 | | | | 170 | | | | | | 175 | | |
| Glu | Gln | Ser | Ser | Leu | Asp | Leu | Gly | Phe | Pro | Asp | Asp | Asp | Asp | Asp | Gly | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Gly | Gln | Pro | Glu | Val | Leu | Ser | Pro | Thr | Gln | Pro | Ser | Ala | Met | Ala | Gln | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Ala | Ala | Ser | Gly | Gly | Cys | Glu | Ile | Pro | Ala | Arg | Leu | Arg | Thr | Leu | His | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Asn | Leu | Val | Ile | Gln | Tyr | Ala | Ser | Gln | Gly | Arg | Tyr | Glu | Val | Ala | Val | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Pro | Leu | Cys | Lys | Gln | Ala | Leu | Glu | Asp | Leu | Glu | Lys | Thr | Ser | Gly | His | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| Asp | His | Pro | Asp | Val | Ala | Thr | Met | Leu | Asn | Ile | Leu | Ala | Leu | Val | Tyr | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| Arg | Asp | Gln | Gly | Lys | Tyr | Lys | Glu | Ala | Ala | Asn | Leu | Leu | Asn | Asp | Ala | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| Leu | Gly | Ile | Arg | Glu | Lys | Thr | Leu | Gly | Pro | Asp | His | Pro | Ala | Val | Ala | |
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| Ala | Thr | Leu | Asn | Asn | Leu | Ala | Val | Leu | Tyr | Gly | Lys | Arg | Gly | Lys | Tyr | |
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| Lys | Asp | Ala | Glu | Pro | Leu | Cys | Lys | Arg | Ala | Leu | Val | Ile | Arg | Glu | Lys | |
| | | | | 325 | | | | 330 | | | | | | 335 | | |
| Val | Leu | Gly | Lys | Asp | His | Pro | Asp | Val | Ala | Lys | Gln | Leu | Asn | Asn | Leu | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
| Ala | Leu | Leu | Cys | Gln | Asn | Gln | Gly | Lys | Tyr | Glu | Glu | Val | Glu | Arg | Tyr | |
| | | 355 | | | | | 360 | | | | | 365 | | | | |
| Tyr | Gln | Arg | Ala | Leu | Glu | Ile | Tyr | Gln | Lys | Glu | Leu | Gly | Pro | Asp | Asp | |
| | 370 | | | | | 375 | | | | | 380 | | | | | |
| Pro | Asn | Val | Ala | Lys | Thr | Lys | Asn | Asn | Leu | Ala | Ser | Ala | Tyr | Leu | Lys | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Gln | Gly | Lys | Tyr | Lys | Gln | Ala | Glu | Ile | Leu | Tyr | Lys | Glu | Val | Leu | Thr | |
| | | | | 405 | | | | 410 | | | | | | 415 | | |
| Arg | Ala | His | Glu | Lys | Glu | Phe | Gly | Lys | Val | Asp | Asp | Asp | Asn | Lys | Pro | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |
| Ile | Trp | Met | Gln | Ala | Glu | Glu | Arg | Glu | Glu | Asn | Lys | Ala | Lys | Tyr | Lys | |
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| Asp | Gly | Ala | Pro | Gln | Pro | Asp | Tyr | Gly | Ser | Trp | Leu | Lys | Ala | Val | Lys | |
| | 450 | | | | | 455 | | | | | 460 | | | | | |
| Val | Asp | Ser | Pro | Thr | Val | Thr | Thr | Thr | Leu | Lys | Asn | Leu | Gly | Ala | Leu | |
| | | | | | 470 | | | | | 475 | | | | | 480 | |
| Tyr | Arg | Arg | Gln | Gly | Lys | Tyr | Glu | Ala | Ala | Glu | Thr | Leu | Glu | Glu | Cys | |
| | | | | 485 | | | | 490 | | | | | | 495 | | |
| Ala | Leu | Arg | Ser | Arg | Lys | Ser | Ala | Leu | Glu | Val | Val | Arg | Gln | Thr | Lys | |
| | | | 500 | | | | | 505 | | | | | 510 | | | |
| Ile | Ser | Asp | Val | Leu | Gly | Ser | Asp | Phe | Ser | Lys | Gly | Gln | Ser | Pro | Lys | |
| | | 515 | | | | | 520 | | | | | 525 | | | | |
| Asp | Arg | Lys | Arg | Ser | Asn | Ser | Arg | Asp | Arg | Asn | Arg | Arg | Asp | Ser | Met | |
| | | 530 | | | | 535 | | | | | 540 | | | | | |
| Asp | Ser | Val | Ser | Tyr | Glu | Lys | Ser | Gly | Asp | Gly | Asp | Glu | His | Glu | Lys | |
| | | | | | 550 | | | | | 555 | | | | | 560 | |
| Ser | Lys | Leu | His | Val | Gly | Thr | Ser | His | Lys | Gln | | | | | | |
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 35 40 45

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Gln | Ser | Leu | Lys | Met | Leu | Lys | Lys | Asp | Thr | Pro | Gly | Asp | Ser |
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| Asn | Leu | Val | Glu | Glu | Lys | Thr | Asp | Ile | Ile | Glu | Lys | Ser | Leu | Glu | Ser |
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| Leu | Glu | Leu | Gly | Leu | Gly | Glu | Ala | Lys | Val | Met | Met | Ala | Leu | Gly | His |
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| His | Leu | Asn | Met | Val | Glu | Ala | Glu | Lys | Gln | Lys | Leu | Arg | Ala | Gln | Val |
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| Arg | Arg | Leu | Val | Gln | Glu | Asn | Thr | Trp | Leu | Arg | Asp | Glu | Leu | Ala | Ala |
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| Thr | Gln | Gln | Lys | Leu | Gln | Thr | Ser | Glu | Gln | Asn | Leu | Ala | Asp | Leu | Glu |
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| Val | Lys | Tyr | Lys | His | Leu | Glu | Tyr | Met | Asn | Ser | Ile | Lys | Lys | Tyr | Asp |
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| Glu | Asp | Arg | Thr | Pro | Asp | Glu | Glu | Ala | Ser | Ser | Ser | Asp | Pro | Leu | Asp |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Leu | Gly | Phe | Pro | Glu | Asp | Asp | Asp | Gly | Gly | Gln | Ala | Asp | Glu | Ser | Tyr |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Pro | Gln | Pro | Gln | Thr | Gly | Ser | Gly | Ser | Val | Ser | Ala | Ala | Ala | Gly | Gly |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Tyr | Glu | Ile | Pro | Ala | Arg | Leu | Arg | Thr | Leu | His | Asn | Leu | Val | Ile | Gln |
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| Tyr | Ala | Ser | Gln | Ser | Arg | Tyr | Glu | Val | Ala | Val | Pro | Leu | Cys | Lys | Gln |
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| Ala | Leu | Glu | Asp | Leu | Glu | Lys | Thr | Ser | Gly | His | Asp | His | Pro | Asp | Val |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ala | Thr | Met | Leu | Asn | Ile | Leu | Ala | Leu | Val | Tyr | Arg | Asp | Gln | Asn | Lys |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Tyr | Lys | Glu | Ala | Gly | Asn | Leu | Leu | His | Asp | Ala | Leu | Ala | Ile | Arg | Glu |
| | | | 275 | | | | 280 | | | | | 285 | | | |
| Lys | Thr | Leu | Gly | Pro | Asp | His | Pro | Ala | Val | Ala | Ala | Thr | Leu | Asn | Asn |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Leu | Ala | Val | Leu | Tyr | Gly | Lys | Arg | Gly | Lys | Tyr | Lys | Glu | Ala | Glu | Pro |
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| Leu | Cys | Lys | Arg | Ala | Leu | Glu | Ile | Arg | Glu | Lys | Val | Leu | Gly | Lys | Asp |
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| His | Pro | Asp | Val | Ala | Lys | Gln | Leu | Asn | Asn | Leu | Ala | Leu | Leu | Cys | Gln |
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| Asn | Gln | Gly | Lys | Tyr | Glu | Glu | Val | Glu | Trp | Tyr | Tyr | Gln | Arg | Ala | Leu |
| | | | 355 | | | | 360 | | | | | 365 | | | |
| Glu | Ile | Tyr | Glu | Lys | Lys | Leu | Gly | Pro | Asp | Asp | Pro | Asn | Val | Ala | Lys |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Thr | Lys | Asn | Asn | Leu | Ala | Ala | Ala | Tyr | Leu | Lys | Gln | Gly | Lys | Tyr | Lys |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Ala | Ala | Glu | Thr | Leu | Tyr | Lys | Gln | Val | Leu | Thr | Arg | Ala | His | Glu | Arg |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Glu | Phe | Gly | Leu | Ser | Ala | Asp | Asp | Lys | Asp | Asn | Lys | Pro | Ile | Trp | Met |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Gln | Ala | Glu | Glu | Arg | Glu | Glu | Lys | Gly | Lys | Phe | Lys | Asp | Asn | Ala | Pro |
| | | | 435 | | | | 440 | | | | | 445 | | | |
| Tyr | Gly | Asp | Tyr | Gly | Gly | Trp | His | Lys | Ala | Ala | Lys | Val | Asp | Ser | Arg |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Ser | Arg | Ser | Ser | Pro | Thr | Val | Thr | Thr | Thr | Leu | Lys | Asn | Leu | Gly | Ala |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Leu | Tyr | Arg | Arg | Gln | Gly | Lys | Tyr | Asp | Ala | Ala | Glu | Ile | Leu | Glu | Glu |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Cys | Ala | Met | Lys | Ser | Arg | Arg | Asn | Ala | Leu | Asp | Met | Val | Arg | Glu | Thr |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Lys | Val | Arg | Glu | Leu | Leu | Gly | Gln | Asp | Leu | Ser | Thr | Asp | Val | Pro | Arg |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Ser | Glu | Ala | Met | Ala | Lys | Glu | Arg | His | His | Arg | Arg | Ser | Ser | Gly | Thr |
| | 530 | | | | | 535 | | | | | 540 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | His | Gly | Ser | Thr | Glu | Ser | Val | Ser | Tyr | Glu | Lys | Thr | Asp | Gly |
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| Ser | Glu | Glu | Val | Ser | Ile | Gly | Val | Ala | Trp | Lys | Ala | Lys | Arg | Lys | Ala |
| | | | | 565 | | | | | 570 | | | | | | 575 |
| Lys | Asp | Arg | Ser | Arg | Ser | Ile | Pro | Ala | Gly | Tyr | Val | Glu | Ile | Pro | Arg |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ser | Pro | Pro | His | Val | Leu | Val | Glu | Asn | Gly | Asp | Gly | Lys | Leu | Arg | Arg |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Ser | Gly | Ser | Leu | Ser | Lys | Leu | Arg | Ala | Ser | Val | Arg | Arg | Ser | Ser | Thr |
| 610 | | | | | | 615 | | | | | 620 | | | | |
| Lys | Leu | Leu | Asn | Lys | Leu | Lys | Gly | Arg | Glu | Ser | Asp | Asp | Asp | Gly | Gly |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Met | Lys | Arg | Ala | Ser | Ser | Met | Ser | Val | Leu | Pro | Ser | Arg | Gly | Asn | Asp |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Glu | Ser | Thr | Pro | Ala | Pro | Ile | Gln | Leu | Ser | Gln | Arg | Gly | Arg | Val | Gly |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Ser | His | Asp | Asn | Leu | Ser | Ser | Arg | Arg | Gln | Ser | Gly | Asn | Phe | | |
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<400> 34

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Leu | Leu | Pro | Ala | Ala | Arg | Gly | Val | Pro | His | Arg | His | Arg | Arg | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Leu | Gly | Ser | Gly | Leu | Gly | Arg | His | Gly | Ala | Ala | Asp | Thr | Ala | Cys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Asn | Arg | Pro | Leu | Asp | Leu | Val | Phe | Ile | Ile | Asp | Ser | Ser | Arg | Ser |
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| Val | Arg | Pro | Glu | Glu | Phe | Glu | Lys | Val | Lys | Ile | Phe | Leu | Ser | Lys | Met |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ile | Asp | Thr | Leu | Asp | Val | Gly | Glu | Arg | Thr | Thr | Arg | Val | Ala | Val | Met |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Asn | Tyr | Ala | Ser | Thr | Val | Lys | Val | Glu | Phe | Pro | Leu | Arg | Thr | Tyr | Phe |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asp | Lys | Ala | Ser | Met | Lys | Glu | Ala | Val | Ser | Arg | Ile | Gln | Pro | Leu | Ser |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ala | Gly | Thr | Met | Thr | Gly | Leu | Ala | Ile | Gln | Ala | Ala | Met | Asp | Glu | Val |
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| Phe | Thr | Glu | Glu | Met | Gly | Thr | Arg | Pro | Ala | Asn | Phe | Asn | Ile | Pro | Lys |
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| Val | Val | Ile | Ile | Val | Thr | Asp | Gly | Arg | Pro | Gln | Asp | Gln | Val | Glu | Asn |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Val | Ala | Ala | Asn | Ala | Arg | Thr | Ala | Gly | Ile | Glu | Ile | Tyr | Ala | Val | Gly |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Val | Gly | Arg | Ala | Asp | Met | Gln | Ser | Leu | Arg | Ile | Met | Ala | Ser | Glu | Pro |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Leu | Asp | Glu | His | Val | Phe | Tyr | Val | Glu | Thr | Tyr | Gly | Val | Ile | Glu | Lys |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Leu | Thr | Ser | Lys | Phe | Arg | Glu | Thr | Phe | Cys | Ala | Ala | Asn | Thr | Cys | Ala |
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| Leu | Gly | Thr | His | Asp | Cys | Glu | Gln | Val | Cys | Val | Ser | Asn | Asp | Gly | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Leu | Cys | Asp | Cys | Tyr | Glu | Gly | Tyr | Thr | Leu | Asn | Pro | Asp | Lys | Arg |
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| Thr | Cys | Ser | Ala | Val | Asp | Val | Cys | Ala | Pro | Gly | Arg | His | Glu | Cys | Asp |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Gln | Ile | Cys | Val | Ser | Asn | Asn | Gly | Ser | Tyr | Val | Cys | Glu | Cys | Phe | Glu |

| | | | | |
|---|--|-----|--|-----|
| 290 | | 295 | | 300 |
| Gly Tyr Thr Leu Asn Pro Asp Lys Lys Thr Cys Ser Ala Met Asp Val | | | | |
| 305 | | 310 | | 320 |
| Cys Ala Pro Gly Arg His Asp Cys Ala Gln Val Cys Arg Arg Asn Gly | | | | |
| | | 325 | | 335 |
| Gly Ser Tyr Ser Cys Asp Cys Phe Glu Gly Phe Thr Leu Asn Pro Asp | | | | |
| | | 340 | | 350 |
| Lys Lys Thr Cys Ser Ala Val Asp Val Cys Ala Pro Gly Arg His Asp | | | | |
| | | 355 | | 365 |
| Cys Glu Gln Val Cys Val Arg Asp Asp Leu Phe Tyr Thr Cys Asp Cys | | | | |
| | | 370 | | 380 |
| Tyr Gln Gly Tyr Val Leu Asn Pro Asp Lys Lys Thr Cys Ser Arg Ala | | | | |
| 385 | | 390 | | 400 |
| Thr Thr Ser Ser Leu Val Thr Asp Glu Glu Ala Cys Lys Cys Glu Ala | | | | |
| | | 405 | | 415 |
| Ile Ala Ala Leu Gln Asp Ser Val Thr Ser Arg Leu Glu Ala Leu Ser | | | | |
| | | 420 | | 430 |
| Thr Lys Leu Asp Glu Val Ser Gln Lys Leu Gln Ala Tyr Gln Asp Arg | | | | |
| | | 435 | | 445 |
| Gln Gln Val Val | | 440 | | |
| 450 | | | | |

<210> 35
 <211> 486
 <212> PRT
 <213> Homo sapiens

| | |
|---|-------------|
| <400> 35 | |
| Met Pro Arg Pro Ala Pro Ala Arg Arg Leu Pro Gly Leu Leu Leu Leu | |
| 1 5 10 15 | |
| Leu Trp Pro Leu Leu Leu Leu Pro Ser Ala Ala Pro Asp Pro Val Ala | |
| 20 25 30 | |
| Arg Pro Gly Phe Arg Arg Leu Glu Thr Arg Gly Pro Gly Gly Ser Pro | |
| 35 40 45 | |
| Gly Arg Arg Pro Ser Pro Ala Ala Pro Asp Gly Ala Pro Ala Ser Gly | |
| 50 55 60 | |
| Thr Ser Glu Pro Gly Arg Ala Arg Gly Ala Gly Val Cys Lys Ser Arg | |
| 65 70 75 80 | |
| Pro Leu Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Arg Pro | |
| 85 90 95 | |
| Leu Glu Phe Thr Lys Val Lys Thr Phe Val Ser Arg Ile Ile Asp Thr | |
| 100 105 110 | |
| Leu Asp Ile Gly Pro Ala Asp Thr Arg Val Ala Val Val Asn Tyr Ala | |
| 115 120 125 | |
| Ser Thr Val Lys Ile Glu Phe Gln Leu Gln Ala Tyr Thr Asp Lys Gln | |
| 130 135 140 | |
| Ser Leu Lys Gln Ala Val Gly Arg Ile Thr Pro Leu Ser Thr Gly Thr | |
| 145 150 155 160 | |
| Met Ser Gly Leu Ala Ile Gln Thr Ala Met Asp Glu Ala Phe Thr Val | |
| 165 170 175 | |
| Glu Ala Gly Ala Arg Glu Pro Ser Ser Asn Ile Pro Lys Val Ala Ile | |
| 180 185 190 | |
| Ile Val Thr Asp Gly Arg Pro Gln Asp Gln Val Asn Glu Val Ala Ala | |
| 195 200 205 | |
| Arg Ala Gln Ala Ser Gly Ile Glu Leu Tyr Ala Val Gly Val Asp Arg | |
| 210 215 220 | |
| Ala Asp Met Ala Ser Leu Lys Met Met Ala Ser Glu Pro Leu Glu Glu | |
| 225 230 235 240 | |
| His Val Phe Tyr Val Glu Thr Tyr Gly Val Ile Glu Lys Leu Ser Ser | |
| | 245 250 255 |
| Arg Phe Gln Glu Thr Phe Cys Ala Leu Asp Pro Cys Val Leu Gly Thr | |
| 260 265 270 | |

His Gln Cys Gln His Val Cys Ile Ser Asp Gly Glu Gly Lys His His
 275 280
 Cys Glu Cys Ser Gln Gly Tyr Thr Leu Asn Ala Asp Lys Lys Thr Cys
 290 295 300
 Ser Ala Leu Asp Arg Cys Ala Leu Asn Thr His Gly Cys Glu His Ile
 305 310 315 320
 Cys Val Asn Asp Arg Ser Gly Ser Tyr His Cys Glu Cys Tyr Glu Gly
 325 330 335
 Tyr Thr Leu Asn Glu Asp Arg Lys Thr Cys Ser Ala Gln Asp Lys Cys
 340 345 350
 Ala Leu Gly Thr His Gly Cys Gln His Ile Cys Val Asn Asp Arg Thr
 355 360 365
 Gly Ser His His Cys Glu Cys Tyr Glu Gly Tyr Thr Leu Asn Ala Asp
 370 375 380
 Lys Lys Thr Cys Ser Val Arg Asp Lys Cys Ala Leu Gly Ser His Gly
 385 390 395 400
 Cys Gln His Ile Cys Val Ser Asp Gly Ala Ala Ser Tyr His Cys Asp
 405 410 415
 Cys Tyr Pro Gly Tyr Thr Leu Asn Glu Asp Lys Lys Thr Cys Ser Ala
 420 425 430
 Thr Glu Glu Ala Arg Arg Leu Val Ser Thr Glu Asp Ala Cys Gly Cys
 435 440 445
 Glu Ala Thr Leu Ala Phe Gln Asp Lys Val Ser Ser Tyr Leu Gln Arg
 450 455 460
 Leu Asn Thr Lys Leu Asp Asp Ile Leu Glu Lys Leu Lys Ile Asn Glu
 465 470 475 480
 Tyr Gly Gln Ile His Arg
 485

<210> 36
 <211> 481
 <212> PRT
 <213> Mus musculus

<400> 36
 Met Leu Leu Ser Ala Pro Leu Arg His Leu Pro Gly Leu Leu Leu Leu
 1 5 10 15
 Leu Trp Pro Leu Leu Leu Pro Ser Leu Ala Ala Pro Gly Arg Leu
 20 25 30
 Ala Arg Ala Ser Val Arg Arg Leu Gly Thr Arg Val Pro Gly Gly Ser
 35 40 45
 Pro Gly His Leu Ser Ala Leu Ala Thr Ser Thr Arg Ala Pro Tyr Ser
 50 55 60
 Gly Gly Arg Gly Ala Gly Val Cys Lys Ser Arg Pro Leu Asp Leu Val
 65 70 75 80
 Phe Ile Ile Asp Ser Ser Arg Ser Val Arg Pro Leu Glu Phe Thr Lys
 85 90 95
 Val Lys Thr Phe Val Ser Arg Ile Ile Asp Thr Leu Asp Ile Gly Ala
 100 105 110
 Thr Asp Thr Arg Val Ala Val Val Asn Tyr Ala Ser Thr Val Lys Ile
 115 120 125
 Glu Phe Gln Leu Asn Thr Tyr Ser Asp Lys Gln Ala Leu Lys Gln Ala
 130 135 140
 Val Ala Arg Ile Thr Pro Leu Ser Thr Gly Thr Met Ser Gly Leu Ala
 145 150 155 160
 Ile Gln Thr Ala Met Glu Glu Ala Phe Thr Val Glu Ala Gly Ala Arg
 165 170 175
 Gly Pro Met Ser Asn Ile Pro Lys Val Ala Ile Ile Val Thr Asp Gly
 180 185 190
 Arg Pro Gln Asp Gln Val Asn Glu Val Ala Ala Arg Ala Arg Ala Ser
 195 200 205
 Gly Ile Glu Leu Tyr Ala Val Gly Val Asp Arg Ala Asp Met Glu Ser

| | | |
|---|-----|-----|
| 210 | 215 | 220 |
| Leu Lys Met Met Ala Ser Lys Pro Leu Glu Glu His Val Phe Tyr Val | | |
| 225 | 230 | 235 |
| Glu Thr Tyr Gly Val Ile Glu Lys Leu Ser Ala Arg Phe Gln Glu Thr | | |
| | 245 | 250 |
| Phe Cys Ala Leu Asp Gln Cys Met Leu Gly Thr His Gln Cys Gln His | | |
| | 260 | 265 |
| Val Cys Val Ser Asp Gly Asp Gly Lys His His Cys Glu Cys Ser Gln | | |
| | 275 | 280 |
| Gly Tyr Thr Leu Asn Ala Asp Gly Lys Thr Cys Ser Ala Ile Asp Lys | | |
| | 290 | 295 |
| Cys Ala Leu Ser Thr His Gly Cys Glu Gln Ile Cys Ile Asn Asp Arg | | |
| 305 | 310 | 315 |
| Asn Gly Ser Tyr His Cys Glu Cys Tyr Gly Tyr Ala Leu Asn Ala | | |
| | 325 | 330 |
| Asp Arg Arg Thr Cys Ala Ala Leu Asp Lys Cys Ala Ser Gly Thr His | | |
| | 340 | 345 |
| Gly Cys Gln His Ile Cys Val Asn Asp Gly Ala Gly Ser His His Cys | | |
| | 355 | 360 |
| Glu Cys Phe Glu Gly Tyr Thr Leu Asn Ala Asp Lys Lys Thr Cys Ser | | |
| | 370 | 375 |
| Val Arg Asn Lys Cys Ala Leu Gly Thr His Gly Cys Gln His Ile Cys | | |
| 385 | 390 | 395 |
| Val Ser Asp Gly Ala Val Ala Tyr His Cys Asp Cys Phe Pro Gly Tyr | | |
| | 405 | 410 |
| Thr Leu Asn Asp Asp Lys Lys Thr Cys Ser Asp Ile Glu Glu Ala Arg | | |
| | 420 | 425 |
| Ser Leu Ile Ser Ile Glu Asp Ala Cys Gly Cys Gly Ala Thr Leu Ala | | |
| | 435 | 440 |
| Phe Gln Glu Lys Val Ser Ser His Leu Gln Lys Leu Asn Thr Lys Leu | | |
| | 450 | 455 |
| Asp Asn Ile Leu Lys Lys Leu Lys Val Thr Glu Tyr Gly Gln Val His | | |
| 465 | 470 | 475 |
| Arg | | 480 |

<210> 37
 <211> 1507
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 37
 Met Val Ser Leu Ile Asp Thr Ile Glu Ala Ala Ala Glu Lys Gln Lys
 1 5 10
 Gln Ser Gln Ala Val Val Thr Asn Thr Ser Ala Ser Ser Ser Cys
 20 25 30
 Ser Ser Ser Phe Ser Ser Ser Pro Pro Ser Ser Ser Val Gly Ser Pro
 35 40 45
 Ser Pro Gly Ala Pro Lys Thr Asn Leu Thr Ala Ser Gly Lys Pro Lys
 50 55 60
 Glu Lys Arg Arg Asn Asn Glu Lys Arg Lys Glu Lys Ser Arg Asp Ala
 65 70 75 80
 Ala Arg Cys Arg Arg Ser Lys Glu Thr Glu Ile Phe Met Glu Leu Ser
 85 90 95
 Ala Ala Leu Pro Leu Lys Thr Asp Asp Val Asn Gln Leu Asp Lys Ala
 100 105 110
 Ser Val Met Arg Ile Thr Ile Ala Phe Leu Lys Ile Arg Glu Met Leu
 115 120 125
 Gln Phe Val Pro Ser Leu Arg Asp Cys Asn Asp Asp Ile Lys Gln Asp
 130 135 140
 Ile Glu Thr Ala Glu Asp Gln Gln Glu Val Lys Pro Lys Leu Glu Val
 145 150 155 160

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Glu | Asp | Trp | Leu | Asn | Gly | Ala | Glu | Ala | Arg | Glu | Leu | Leu | Lys |
| | | | 165 | | | | | | 170 | | | | | | |
| Gln | Thr | Met | Asp | Gly | Phe | Leu | Leu | Val | Leu | Ser | His | Glu | Gly | Asp | Ile |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Thr | Tyr | Val | Ser | Glu | Asn | Val | Val | Glu | Tyr | Leu | Gly | Ile | Thr | Lys | Ile |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Asp | Thr | Leu | Gly | Gln | Gln | Ile | Trp | Glu | Tyr | Ser | His | Gln | Cys | Asp | His |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ala | Glu | Ile | Lys | Glu | Ala | Leu | Ser | Leu | Lys | Arg | Glu | Leu | Ala | Gln | Lys |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Lys | Asp | Glu | Pro | Gln | Gln | Asn | Ser | Gly | Val | Ser | Thr | His | His | Arg |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asp | Leu | Phe | Val | Arg | Leu | Lys | Cys | Thr | Leu | Thr | Ser | Arg | Gly | Arg | Ser |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ile | Asn | Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Val | Ile | His | Ile | Thr | Gly | His |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Leu | Val | Val | Asn | Ala | Lys | Gly | Glu | Arg | Leu | Leu | Met | Ala | Ile | Gly | Arg |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Pro | Ile | Pro | His | Pro | Ser | Asn | Ile | Glu | Ile | Pro | Leu | Gly | Thr | Ser | Thr |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Phe | Leu | Thr | Lys | His | Ser | Leu | Asp | Met | Arg | Phe | Thr | Tyr | Val | Asp | Asp |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Lys | Met | His | Asp | Leu | Leu | Gly | Tyr | Ser | Pro | Lys | Asp | Leu | Leu | Asp | Thr |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Ser | Leu | Phe | Ser | Cys | Gln | His | Gly | Ala | Asp | Ser | Glu | Arg | Leu | Met | Ala |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Thr | Phe | Lys | Ser | Val | Leu | Ser | Lys | Gly | Gln | Gly | Glu | Thr | Ser | Arg | Tyr |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Arg | Phe | Leu | Gly | Lys | Tyr | Gly | Gly | Tyr | Cys | Trp | Ile | Leu | Ser | Gln | Ala |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Thr | Ile | Val | Tyr | Asp | Lys | Leu | Lys | Pro | Gln | Ser | Val | Val | Cys | Val | Asn |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Tyr | Val | Ile | Ser | Asn | Leu | Glu | Asn | Lys | His | Glu | Ile | Tyr | Ser | Leu | Ala |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Gln | Gln | Thr | Ala | Ala | Ser | Glu | Gln | Lys | Glu | Gln | His | His | Gln | Ala | Ala |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Glu | Thr | Glu | Lys | Glu | Pro | Glu | Lys | Ala | Ala | Asp | Pro | Glu | Ile | Ile | Ala |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Gln | Glu | Thr | Lys | Glu | Thr | Val | Asn | Thr | Pro | Ile | His | Thr | Ser | Glu | Leu |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Gln | Ala | Lys | Pro | Leu | Gln | Leu | Glu | Ser | Glu | Lys | Ala | Glu | Lys | Thr | Ile |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Glu | Glu | Thr | Lys | Thr | Ile | Ala | Thr | Ile | Pro | Pro | Val | Thr | Ala | Thr | Ser |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Thr | Ala | Asp | Gln | Ile | Lys | Gln | Leu | Pro | Glu | Ser | Asn | Pro | Tyr | Lys | Gln |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Ile | Leu | Gln | Ala | Glu | Leu | Leu | Ile | Lys | Arg | Glu | Asn | His | Ser | Pro | Gly |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Pro | Arg | Thr | Ile | Thr | Ala | Gln | Leu | Leu | Ser | Gly | Ser | Ser | Ser | Gly | Leu |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Arg | Pro | Glu | Glu | Lys | Arg | Pro | Lys | Ser | Val | Thr | Ala | Ser | Val | Leu | Arg |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Pro | Ser | Pro | Ala | Pro | Pro | Leu | Thr | Pro | Pro | Pro | Thr | Ala | Val | Leu | Cys |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Lys | Lys | Thr | Pro | Leu | Gly | Val | Glu | Pro | Asn | Leu | Pro | Pro | Thr | Thr | Thr |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Ala | Thr | Ala | Ala | Ile | Ile | Ser | Ser | Ser | Asn | Gln | Gln | Gln | Ile | Ala | |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Gln | Gln | Thr | Gln | Leu | Gln | Asn | Pro | Gln | Gln | Pro | Ala | Gln | Asp | Met | Ser |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Lys | Gly | Phe | Cys | Ser | Leu | Phe | Ala | Asp | Asp | Gly | Arg | Gly | Leu | Thr | Met |
| | | | | 645 | | | | | 650 | | | | | 655 | |

| | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Leu | Lys | Glu | Glu | Pro | Asp | Asp | Leu | Ser | His | His | Leu | Ala | Ser | Thr | Asn | |
| | | | 660 | | | | | 665 | | | | | | 670 | | |
| Cys | Ile | Gln | Leu | Asp | Glu | Met | Thr | Pro | Phe | Ser | Asp | Met | Leu | Val | Gly | |
| | | 675 | | | | | 680 | | | | | 685 | | | | |
| Leu | Met | Gly | Thr | Cys | Leu | Leu | Pro | Glu | Asp | Ile | Asn | Ser | Leu | Asp | Ser | |
| | 690 | | | | | 695 | | | | | 700 | | | | | |
| Thr | Thr | Cys | Ser | Thr | Thr | Ala | Ser | Gly | Gln | His | Tyr | Gln | Ser | Pro | Ser | |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 | |
| Ser | Ser | Ser | Thr | Ser | Ala | Pro | Ser | Asn | Thr | Ser | Ser | Ser | Asn | Asn | Ser | |
| | | | | 725 | | | | | 730 | | | | | 735 | | |
| Tyr | Ala | Asn | Ser | Pro | Leu | Ser | Pro | Leu | Thr | Pro | Asn | Ser | Thr | Ala | Thr | |
| | | | 740 | | | | | 745 | | | | | 750 | | | |
| Ala | Ser | Asn | Pro | Ser | His | Gln | Gln | Gln | Gln | Gln | His | His | Asn | Gln | Gln | |
| | | 755 | | | | | 760 | | | | | 765 | | | | |
| Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | His | His | Pro | Gln | His | His | Asp | Asn | |
| | 770 | | | | | 775 | | | | | 780 | | | | | |
| Ser | Asn | Ser | Ser | Ser | Asn | Ile | Asp | Pro | Leu | Phe | Asn | Tyr | Arg | Glu | Glu | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | |
| Ser | Asn | Asp | Thr | Ser | Cys | Ser | Gln | His | Leu | His | Ser | Pro | Ser | Ile | Thr | |
| | | | | 805 | | | | | 810 | | | | | 815 | | |
| Ser | Lys | Ser | Pro | Glu | Asp | Ser | Ser | Leu | Pro | Ser | Leu | Cys | Ser | Pro | Asn | |
| | | | 820 | | | | | 825 | | | | | 830 | | | |
| Ser | Leu | Thr | Gln | Glu | Asp | Asp | Phe | Ser | Phe | Glu | Ala | Phe | Ala | Met | Arg | |
| | | 835 | | | | | 840 | | | | | 845 | | | | |
| Ala | Pro | Tyr | Ile | Pro | Ile | Asp | Asp | Asp | Met | Pro | Leu | Leu | Thr | Glu | Thr | |
| | 850 | | | | | 855 | | | | | 860 | | | | | |
| Asp | Leu | Met | Trp | Cys | Pro | Pro | Glu | Asp | Leu | Gln | Thr | Met | Val | Pro | Lys | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | |
| Glu | Ile | Asp | Ala | Ile | Gln | Gln | Gln | Leu | Gln | Gln | Leu | Gln | Gln | Gln | His | |
| | | | | 885 | | | | 890 | | | | | | 895 | | |
| His | Gln | Gln | Tyr | Ala | Gly | Asn | Thr | Gly | Tyr | Gln | Gln | Gln | Gln | Gln | Gln | |
| | | 900 | | | | | | 905 | | | | | 910 | | | |
| Pro | Gln | Leu | Gln | Gln | Gln | His | Phe | Ser | Asn | Ser | Leu | Cys | Ser | Ser | Pro | |
| | | 915 | | | | | 920 | | | | | 925 | | | | |
| Ala | Ser | Thr | Val | Ser | Ser | Leu | Ser | Pro | Ser | Pro | Val | Gln | Gln | His | His | |
| | | 930 | | | | 935 | | | | | 940 | | | | | |
| Gln | Gln | Gln | Gln | Ala | Ala | Val | Phe | Thr | Ser | Asp | Ser | Ser | Glu | Leu | Ala | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | |
| Ala | Leu | Leu | Cys | Gly | Ser | Gly | Asn | Gly | Thr | Leu | Ser | Ile | Leu | Ala | Gly | |
| | | | | 965 | | | | | 970 | | | | | 975 | | |
| Ser | Gly | Val | Thr | Val | Ala | Glu | Glu | Cys | Asn | Glu | Arg | Leu | Gln | Gln | His | |
| | | | 980 | | | | | 985 | | | | | 990 | | | |
| Gln | Gln | Gln | Gln | Gln | Gln | Thr | Ser | Gly | Asn | Glu | Phe | Arg | Thr | Phe | Gln | |
| | | 995 | | | | | 1000 | | | | | 1005 | | | | |
| Gln | Leu | Gln | Gln | Glu | Leu | Gln | Leu | Gln | Glu | Glu | Gln | Gln | Gln | Arg | Gln | |
| | 1010 | | | | | 1015 | | | | | 1020 | | | | | |
| Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Leu | Leu | |
| 1025 | | | | | 1030 | | | | | 1035 | | | | | 1040 | |
| Ser | Leu | Asn | Ile | Glu | Cys | Lys | Lys | Glu | Lys | Tyr | Asp | Val | Gln | Met | Gly | |
| | | | | 1045 | | | | | 1050 | | | | | 1055 | | |
| Gly | Ser | Leu | Cys | His | Pro | Met | Glu | Asp | Ala | Phe | Glu | Asn | Asp | Tyr | Ser | |
| | | | 1060 | | | | | 1065 | | | | | 1070 | | | |
| Lys | Asp | Ser | Ala | Asn | Leu | Asp | Cys | Trp | Asp | Leu | Ile | Gln | Met | Gln | Val | |
| | | 1075 | | | | | 1080 | | | | | 1085 | | | | |
| Val | Asp | Thr | Glu | Pro | Val | Ser | Pro | Asn | Ala | Ala | Ser | Pro | Thr | Pro | Cys | |
| | 1090 | | | | | 1095 | | | | | | 1100 | | | | |
| Lys | Val | Ser | Ala | Ile | Gln | Leu | Leu | Gln | Gln | Gln | Gln | Gln | Leu | Gln | Gln | |
| 1105 | | | | | 1110 | | | | | 1115 | | | | | 1120 | |
| Gln | Gln | Gln | Gln | Gln | Gln | Asn | Ile | Ile | Leu | Asn | Ala | Val | Pro | Leu | Ile | |
| | | | | 1125 | | | | | 1130 | | | | | 1135 | | |
| Thr | Ile | Gln | Asn | Asn | Lys | Glu | Leu | Met | Gln | Gln | Gln | Gln | Gln | Gln | Gln | |
| | | | 1140 | | | | | 1145 | | | | | | 1150 | | |

Gln Gln Gln Gln Gln Glu Gln Leu Gln Gln Pro Ala Ile Lys Leu Leu
 1155 1160 1165
 Asn Gly Ala Ser Ile Ala Pro Val Asn Thr Lys Ala Thr Ile Arg Leu
 1170 1175 1180
 Val Glu Ser Lys Pro Pro Thr Thr Thr Gln Ser Arg Met Ala Lys Val
 1185 1190 1195 1200
 Asn Leu Val Pro Gln Gln Gln Gln His Gly Asn Lys Arg His Leu Asn
 1205 1210 1215
 Ser Ala Thr Gly Ala Gly Asn Pro Val Glu Ser Lys Arg Leu Lys Ser
 1220 1225 1230
 Gly Thr Leu Cys Leu Asp Val Gln Ser Pro Gln Leu Leu Gln Gln Leu
 1235 1240 1245
 Ile Gly Lys Asp Pro Ala Gln Gln Gln Thr Gln Ala Ala Lys Arg Ala
 1250 1255 1260
 Gly Ser Glu Arg Trp Gln Leu Ser Ala Glu Ser Lys Gln Gln Lys Gln
 1265 1270 1275 1280
 Gln Gln Gln Gln Ser Asn Ser Val Leu Lys Asn Leu Leu Val Ser Gly
 1285 1290 1295
 Arg Asp Asp Asp Asp Ser Glu Ala Met Ile Ile Asp Glu Asp Asn Ser
 1300 1305 1310
 Leu Val Gln Pro Ile Pro Leu Gly Lys Tyr Gly Leu Pro Leu His Cys
 1315 1320 1325
 His Thr Ser Thr Ser Ser Val Leu Arg Asp Tyr His Asn Asn Pro Leu
 1330 1335 1340
 Ile Ser Gly Thr Asn Phe Gln Leu Ser Pro Val Phe Gly Gly Ser Asp
 1345 1350 1355 1360
 Ser Ser Gly Gly Asp Gly Glu Thr Gly Ser Val Val Ser Leu Asp Asp
 1365 1370 1375
 Ser Val Pro Pro Gly Leu Thr Ala Cys Asp Thr Asp Ala Ser Ser Asp
 1380 1385 1390
 Ser Gly Ile Asp Glu Asn Ser Leu Met Asp Gly Ala Ser Gly Ser Pro
 1395 1400 1405
 Arg Lys Arg Leu Ser Ser Thr Ser Asn Ser Thr Asn Gln Ala Glu Ser
 1410 1415 1420
 Ala Pro Pro Ala Leu Asp Val Glu Thr Pro Val Thr Gln Lys Ser Val
 1425 1430 1435 1440
 Glu Glu Glu Phe Glu Gly Gly Gly Ser Gly Ser Asn Ala Pro Ser Arg
 1445 1450 1455
 Lys Thr Ser Ile Ser Phe Leu Asp Ser Ser Asn Pro Leu Leu His Thr
 1460 1465 1470
 Pro Ala Met Met Asp Leu Val Asn Asp Asp Tyr Ile Met Gly Glu Gly
 1475 1480 1485
 Gly Phe Glu Phe Ser Asp Asn Gln Leu Glu Gln Val Leu Gly Trp Pro
 1490 1495 1500
 Glu Ile Ala
 1505

<210> 38
 <211> 879
 <212> PRT
 <213> Homo sapiens

<400> 38
 Met Ala Gly Gly Gly Gly Asp Leu Ser Thr Arg Arg Leu Asn Glu Cys
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 Ile Ser Pro Val Ala Asn Glu Met Asn His Leu Pro Ala His Ser His
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 Asp Leu Gln Arg Met Phe Thr Glu Asp Gln Gly Val Asp Asp Arg Leu
 35 40 45
 Leu Tyr Asp Ile Val Phe Lys His Phe Lys Arg Asn Lys Val Glu Ile
 50 55 60
 Ser Asn Ala Ile Lys Lys Thr Phe Pro Phe Leu Glu Gly Leu Arg Asp

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | | | | 70 | | | | 75 | | | | 80 |
| Arg | Asp | Leu | Ile | Thr | Asn | Lys | Met | Phe | Glu | Asp | Ser | Gln | Asp |
| | | | | 85 | | | | | 90 | | | | Ser |
| Arg | Asn | Leu | Val | Pro | Val | Gln | Arg | Val | Val | Tyr | Asn | Val | Leu |
| | | | 100 | | | | | 105 | | | | | Ser |
| Leu | Glu | Lys | Thr | Phe | Asn | Leu | Pro | Val | Leu | Glu | Ala | Leu | Phe |
| | | 115 | | | | | 120 | | | | | 125 | Ser |
| Val | Asn | Met | Gln | Glu | Tyr | Pro | Asp | Leu | Ile | His | Ile | Tyr | Lys |
| | | 130 | | | | | 135 | | | | 140 | | Gly |
| Glu | Asn | Val | Ile | His | Asp | Lys | Leu | Pro | Leu | Gln | Glu | Ser | Glu |
| 145 | | | | | 150 | | | | | 155 | | | Glu |
| Glu | Arg | Glu | Glu | Arg | Ser | Gly | Leu | Gln | Leu | Ser | Leu | Glu | Gln |
| | | | | 165 | | | | 170 | | | | | Gly |
| Gly | Glu | Asn | Ser | Phe | Arg | Ser | Leu | Thr | Trp | Pro | Pro | Ser | Gly |
| | | | 180 | | | | | 185 | | | | | Ser |
| Ser | His | Ala | Gly | Thr | Thr | Pro | Pro | Glu | Asn | Gly | Leu | Ser | Glu |
| | | 195 | | | | | 200 | | | | | 205 | His |
| Cys | Glu | Thr | Glu | Gln | Ile | Asn | Ala | Lys | Arg | Lys | Asp | Thr | Thr |
| | | 210 | | | | 215 | | | | | 220 | | Ser |
| Lys | Asp | Asp | Ser | Leu | Gly | Ser | Gln | Gln | Thr | Asn | Glu | Gln | Cys |
| 225 | | | | | 230 | | | | | 235 | | | Ala |
| Lys | Ala | Glu | Pro | Thr | Glu | Ser | Cys | Glu | Gln | Ile | Ala | Val | Gln |
| | | | | 245 | | | | 250 | | | | | Val |
| Asn | Gly | Asp | Ala | Gly | Arg | Glu | Met | Pro | Cys | Pro | Leu | Pro | Cys |
| | | | 260 | | | | | 265 | | | | | Asp |
| Glu | Ser | Pro | Glu | Ala | Glu | Leu | His | Asn | His | Gly | Ile | Gln | Ile |
| | | 275 | | | | | 280 | | | | | 285 | Asn |
| Cys | Ser | Val | Arg | Leu | Val | Asp | Ile | Lys | Lys | Glu | Lys | Pro | Phe |
| | | 290 | | | | 295 | | | | | 300 | | Ser |
| Ser | Lys | Val | Glu | Cys | Gln | Ala | Gln | Ala | Arg | Thr | His | His | Asn |
| 305 | | | | | 310 | | | | 315 | | | | Gln |
| Ser | Asp | Ile | Ile | Val | Ile | Ser | Ser | Glu | Asp | Ser | Glu | Gly | Ser |
| | | | | 325 | | | | 330 | | | | | Thr |
| Val | Asp | Glu | Pro | Leu | Glu | Val | Phe | Ile | Ser | Ala | Pro | Arg | Ser |
| | | | 340 | | | | 345 | | | | | | Glu |
| Val | Ile | Asn | Asn | Asp | Asn | Pro | Leu | Glu | Ser | Asn | Asp | Glu | Lys |
| | | 355 | | | | | 360 | | | | | 365 | Glu |
| Gln | Glu | Ala | Thr | Cys | Ser | Arg | Pro | Gln | Ile | Val | Pro | Glu | Pro |
| | | 370 | | | | 375 | | | | | 380 | | Met |
| Phe | Arg | Lys | Leu | Ser | Thr | Phe | Arg | Glu | Ser | Phe | Lys | Lys | Arg |
| 385 | | | | | 390 | | | | | 395 | | | Val |
| Gly | Gln | Asp | His | Asp | Phe | Ser | Glu | Ser | Ser | Glu | Glu | Glu | Ala |
| | | | | 405 | | | | 410 | | | | | Pro |
| Glu | Ala | Ser | Ser | Gly | Ala | Leu | Arg | Ser | Lys | His | Gly | Glu | Lys |
| | | | 420 | | | | | 425 | | | | 430 | Ala |
| Met | Thr | Ser | Arg | Ser | Thr | Ser | Thr | Trp | Arg | Ile | Pro | Ser | Arg |
| | | 435 | | | | | 440 | | | | | 445 | Lys |
| Arg | Phe | Ser | Ser | Ser | Asp | Phe | Ser | Asp | Leu | Ser | Asn | Gly | Glu |
| | | 450 | | | | 455 | | | | | 460 | | Glu |
| Gln | Glu | Thr | Cys | Ser | Ser | Ser | Leu | Arg | Arg | Gly | Ser | Gly | Ser |
| 465 | | | | | 470 | | | | | 475 | | | Gln |
| Gln | Glu | Pro | Glu | Asn | Lys | Lys | Cys | Ser | Cys | Val | Met | Cys | Phe |
| | | | | 485 | | | | 490 | | | | | Pro |
| Gly | Val | Pro | Arg | Ser | Gln | Glu | Ala | Arg | Thr | Glu | Ser | Ser | Gln |
| | | | 500 | | | | | 505 | | | | | Ala |
| Asp | Met | Met | Asp | Thr | Met | Asp | Val | Glu | Asn | Asn | Ser | Thr | Leu |
| | | 515 | | | | | 520 | | | | | 525 | Glu |
| His | Ser | Gly | Lys | Arg | Arg | Lys | Lys | Arg | Arg | His | Arg | Ser | Lys |
| | | 530 | | | | 535 | | | | | 540 | | Val |
| Gly | Leu | Gln | Arg | Gly | Arg | Lys | Lys | Asp | Arg | Pro | Arg | Lys | His |
| 545 | | | | | 550 | | | | | 555 | | | Leu |
| Leu | Asn | Asn | Lys | Val | Gln | Lys | Lys | Arg | Trp | Gln | Gln | Arg | Gly |
| | | | | | | | | | | | | | Arg |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 565 | | | | | 570 | | | | | 575 | | | |
| Ala | Asn | Thr | Arg | Pro | Leu | Lys | Arg | Arg | Arg | Lys | Arg | Gly | Pro | Arg | Ile | | |
| | | | 580 | | | | | 585 | | | | | 590 | | | | |
| Pro | Lys | Asp | Glu | Asn | Ile | Asn | Phe | Lys | Gln | Ser | Glu | Leu | Pro | Val | Thr | | |
| | | 595 | | | | | 600 | | | | | 605 | | | | | |
| Cys | Gly | Glu | Val | Lys | Gly | Thr | Leu | Tyr | Lys | Glu | Arg | Phe | Lys | Gln | Gly | | |
| | 610 | | | | 615 | | | | | | 620 | | | | | | |
| Thr | Ser | Lys | Lys | Cys | Ile | Gln | Ser | Glu | Asp | Lys | Lys | Trp | Phe | Thr | Pro | | |
| | 625 | | | | 630 | | | | | 635 | | | | | 640 | | |
| Arg | Glu | Phe | Glu | Ile | Glu | Gly | Asp | Arg | Gly | Ala | Ser | Lys | Asn | Trp | Lys | | |
| | | | | 645 | | | | | 650 | | | | | 655 | | | |
| Leu | Ser | Ile | Arg | Cys | Gly | Gly | Tyr | Thr | Leu | Lys | Val | Leu | Met | Glu | Asn | | |
| | | | 660 | | | | | 665 | | | | | 670 | | | | |
| Lys | Phe | Leu | Pro | Glu | Pro | Pro | Ser | Thr | Arg | Lys | Lys | Arg | Ile | Leu | Glu | | |
| | | 675 | | | | | 680 | | | | | 685 | | | | | |
| Ser | His | Asn | Asn | Thr | Leu | Val | Asp | Pro | Cys | Glu | Glu | His | Lys | Lys | Lys | | |
| | 690 | | | | | 695 | | | | | 700 | | | | | | |
| Asn | Pro | Asp | Ala | Ser | Val | Lys | Phe | Ser | Glu | Phe | Leu | Lys | Lys | Cys | Ser | | |
| | 705 | | | | 710 | | | | | 715 | | | | | 720 | | |
| Glu | Thr | Trp | Lys | Thr | Ile | Phe | Ala | Lys | Glu | Lys | Gly | Lys | Phe | Glu | Asp | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | |
| Met | Ala | Lys | Ala | Asp | Lys | Ala | His | Tyr | Glu | Arg | Glu | Met | Lys | Thr | Tyr | | |
| | | | 740 | | | | | 745 | | | | | 750 | | | | |
| Ile | Pro | Pro | Lys | Gly | Glu | Lys | Lys | Lys | Lys | Phe | Lys | Asp | Pro | Asn | Ala | | |
| | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Pro | Lys | Arg | Pro | Pro | Leu | Ala | Phe | Phe | Leu | Phe | Cys | Ser | Glu | Tyr | Arg | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| Pro | Lys | Ile | Lys | Gly | Glu | His | Pro | Gly | Leu | Ser | Ile | Asp | Asp | Val | Val | | |
| | 785 | | | | 790 | | | | | 795 | | | | | 800 | | |
| Lys | Lys | Leu | Ala | Gly | Met | Trp | Asn | Asn | Thr | Ala | Ala | Ala | Asp | Lys | Gln | | |
| | | | | 805 | | | | | 810 | | | | | 815 | | | |
| Phe | Tyr | Glu | Lys | Lys | Ala | Ala | Lys | Leu | Lys | Glu | Lys | Tyr | Lys | Lys | Asp | | |
| | | | 820 | | | | | 825 | | | | | 830 | | | | |
| Ile | Ala | Ala | Tyr | Arg | Ala | Lys | Gly | Lys | Pro | Asn | Ser | Ala | Lys | Lys | Arg | | |
| | | 835 | | | | | 840 | | | | | 845 | | | | | |
| Val | Val | Lys | Ala | Glu | Lys | Ser | Lys | Lys | Lys | Lys | Glu | Glu | Glu | Glu | Asp | | |
| | 850 | | | | | 855 | | | | | 860 | | | | | | |
| Glu | Glu | Asp | Glu | Gln | Glu | Glu | Glu | Asn | Glu | Glu | Asp | Asp | Asp | Lys | | | |
| | 865 | | | | 870 | | | | | 875 | | | | | | | |

<210> 39
 <211> 284
 <212> PRT
 <213> Gallus gallus

<400> 39
 Met Glu Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
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 Asn Ala Ile Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Gln Ala
 20 25 30
 Glu Asp Arg Cys Lys Gln Leu Glu Glu Gln Gln Gly Leu Gln Lys
 35 40 45
 Lys Leu Lys Gly Thr Glu Asp Glu Val Glu Lys Tyr Ser Glu Ser Val
 50 55 60
 Lys Glu Ala Gln Glu Lys Leu Glu Gln Ala Glu Lys Lys Ala Thr Asp
 65 70 75 80
 Ala Glu Ala Glu Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
 85 90 95
 Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
 100 105 110
 Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
 115 120 125

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Glu | Asn | Arg | Ala | Met | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln |
| 130 | | | | | | 135 | | | | | 140 | | | | |
| Glu | Met | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Val | Leu | Glu | Gly | Glu | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ser | Glu | Glu | Arg | Ala | Glu | Val | Ala | Glu | Ser | Arg | Val | Arg | Gln |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Arg | Thr | Met | Asp | Gln | Ser | Leu | Lys | Ser | Leu | Ile |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Ala | Ser | Glu | Glu | Glu | Tyr | Ser | Thr | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | | | 210 | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Leu | Leu | Gly | Glu | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Glu | Ser | Leu | Ala | Ser | Ala | Lys | Glu | Glu | Asn | Val | Gly | Ile | His | Gln |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Val | Leu | Asp | Gln | Thr | Leu | Leu | Glu | Leu | Asn | Asn | Leu | | | | |
| | | 275 | | | | | 280 | | | | | | | | |

<210> 40
 <211> 284
 <212> PRT
 <213> Homo sapiens

| | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 40 | | | | | | | | | | | | | | | |
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Ala | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Arg | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Val | Ser | Leu | Gln | Lys |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Ile | Gln | Leu | Val | Glu | |
| | | | | 85 | | | | 90 | | | | | 95 | | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Ser | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Arg | Tyr | Glu | Glu | Glu |
| | | | 210 | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | His | Ala | Leu | Asn | Asp | Met | Thr | Ser | Ile | | | | |

275

280

<210> 41
 <211> 284
 <212> PRT
 <213> Gallus gallus

<400> 41
 Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
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 20 25 30
 Glu Glu Arg Ser Lys Gln Leu Glu Asp Asp Ile Val Gln Leu Glu Lys
 35 40 45
 Gln Leu Arg Val Thr Glu Asp Ser Arg Asp Gln Val Leu Glu Glu Leu
 50 55 60
 His Lys Ser Glu Asp Ser Leu Leu Ser Ala Glu Glu Asn Ala Ala Lys
 65 70 75 80
 Ala Glu Ser Glu Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
 85 90 95
 Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
 100 105 110
 Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
 115 120 125
 Val Ile Glu Asn Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
 130 135 140
 Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Glu Ala Asp Arg
 145 150 155 160
 Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Leu Glu Gly Asp Leu
 165 170 175
 Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Ser Lys Cys Ala Glu
 180 185 190
 Leu Glu Glu Glu Leu Lys Leu Val Thr Asn Glu Ala Lys Ser Leu Glu
 195 200 205
 Ala Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu
 210 215 220
 Ile Lys Val Leu Thr Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
 225 230 235 240
 Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
 245 250 255
 Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Asn Met His Gln
 260 265 270
 Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
 275 280

<210> 42
 <211> 248
 <212> PRT
 <213> Gallus gallus

<400> 42
 Met Ala Gly Ile Ser Ser Ile Asp Ala Val Lys Lys Lys Ile Gln Ser
 1 5 10 15
 Leu Gln Gln Val Ala Asp Glu Ala Glu Glu Arg Ala Glu His Leu Gln
 20 25 30
 Arg Glu Ala Asp Ala Glu Arg Gln Ala Arg Glu Arg Ala Glu Ala Glu
 35 40 45
 Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Glu Leu Asp
 50 55 60
 Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala
 65 70 75 80
 Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Asn

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Arg | Ala | Met | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln | Glu | Met | Gln | Leu | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg | Lys | Tyr | Glu | Glu | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Val | Ala | Arg | Lys | Leu | Val | Val | Leu | Glu | Gly | Glu | Leu | Glu | Arg | Ser | Glu | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Glu | Arg | Ala | Glu | Val | Ala | Glu | Ser | Arg | Val | Arg | Gln | Leu | Glu | Glu | Glu | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Leu | Arg | Thr | Met | Asp | Gln | Ser | Leu | Lys | Ser | Leu | Ile | Ala | Ser | Glu | Glu | | |
| | | | 165 | | | | | 170 | | | | | | 175 | | | |
| Glu | Tyr | Ser | Thr | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | Ile | Lys | Leu | Leu | | |
| | | 180 | | | | | 185 | | | | | | 190 | | | | |
| Gly | Glu | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | Phe | Ala | Glu | Arg | | |
| | 195 | | | | | | 200 | | | | | 205 | | | | | |
| Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu | Glu | Glu | Ser | Leu | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Ala | Ser | Ala | Lys | Glu | Glu | Asn | Val | Gly | Ile | His | Gln | Val | Leu | Asp | Gln | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Thr | Leu | Leu | Glu | Leu | Asn | Asn | Leu | | | | | | | | | | |
| | | | | 245 | | | | | | | | | | | | | |

<210> 43
 <211> 284
 <212> PRT
 <213> Homo sapiens

| | | | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| <400> 43 | | | | | | | | | | | | | | | | | |
| Met | Glu | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu | | |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | | | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Glu | Gln | Lys | Gln | Ala | | |
| | | 20 | | | | | 25 | | | | | 30 | | | | | |
| Glu | Glu | Arg | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Ala | Ala | Met | Gln | Lys | | |
| | 35 | | | | | 40 | | | | | 45 | | | | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu | | |
| | 50 | | | | 55 | | | | | 60 | | | | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Glu | Lys | Lys | Ala | Ala | Asp | | |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 | | |
| Ala | Glu | Ala | Glu | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu | | |
| | | | 85 | | | | | 90 | | | | | | 95 | | | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys | | |
| | | 100 | | | | | 105 | | | | | 110 | | | | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys | | |
| | 115 | | | | | 120 | | | | | 125 | | | | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Leu | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Gly | Asp | Leu | | |
| | | | 165 | | | | | 170 | | | | | | 175 | | | |
| Glu | Arg | Thr | Glu | Glu | Arg | Ala | Glu | Leu | Ala | Glu | Ser | Lys | Cys | Ser | Glu | | |
| | 180 | | | | | | 185 | | | | | | 190 | | | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Asn | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu | | |
| | 195 | | | | | 200 | | | | | | 205 | | | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Ile | Lys | Ile | Leu | Thr | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Phe | Ala | Glu | Arg | Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu | | |
| | | | 245 | | | | | 250 | | | | | | 255 | | | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu | | |
| | | 260 | | | | | | 265 | | | | | 270 | | | | |

Glu Leu Asp His Ala Leu Asn Asp Met Thr Ser Ile
 275 280

<210> 44
 <211> 245
 <212> PRT
 <213> Gallus gallus

<400> 44
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 Leu Gln Glu Gln Ala Asp Ala Ala Glu Glu Arg Ala Gly Lys Leu Gln
 20 25 30
 Arg Glu Val Asp Gln Glu Arg Ala Leu Arg Glu Glu Ala Glu Ser Glu
 35 40 45
 Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Glu Leu Asp
 50 55 60
 Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala
 65 70 75 80
 Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Asn
 85 90 95
 Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln Glu Ile Gln Leu
 100 105 110
 Lys Glu Ala Lys His Ile Ala Glu Glu Ala Asp Arg Lys Tyr Glu Glu
 115 120 125
 Val Ala Arg Lys Leu Val Ile Ile Glu Gly Asp Leu Glu Arg Ala Glu
 130 135 140
 Glu Arg Ala Glu Leu Ser Glu Ser Lys Cys Ala Glu Leu Glu Glu Glu
 145 150 155 160
 Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu Ala Gln Ala Glu
 165 170 175
 Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu Ile Lys Val Leu
 180 185 190
 Thr Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu Phe Ala Glu Arg
 195 200 205
 Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu Glu Asp Gln Leu
 210 215 220
 Tyr Gln Gln Leu Glu Gln Asn Ser Arg Leu Thr Asn Glu Leu Lys Leu
 225 230 235 240
 Ala Leu Asn Glu Asp
 245

<210> 45
 <211> 281
 <212> PRT
 <213> Gallus gallus

<400> 45
 Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
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 Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala
 20 25 30
 Glu Glu Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ala Leu Gln Lys
 35 40 45
 Lys Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ser Leu
 50 55 60
 Lys Asp Ala Gln Glu Lys Leu Glu Leu Ala Asp Lys Lys Ala Thr Asp
 65 70 75 80
 Ala Glu Ser Glu Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
 85 90 95
 Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
 100 105 110

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Gly | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Ser | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Thr | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Gln | Leu | Tyr | Gln | Gln | Leu | Glu | Gln | Asn | Ser | Arg | Leu | Thr | Asn |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Lys | Leu | Ala | Leu | Asn | Glu | Asp | | | | | | | |
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<210> 46
 <211> 284
 <212> PRT
 <213> Brachydanio rerio

<400> 46

| | | | | | | | | | | | | | | | |
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| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Thr | Asp | Lys | Lys | Ala | Ala |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Glu | Glu | Arg | Ser | Lys | Gln | Leu | Glu | Asp | Asp | Leu | Val | Ala | Leu | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Leu | Lys | Ala | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ala | Glu | Gly | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Leu | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Val | Glu | Gly | Glu | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Thr | Glu | Glu | Arg | Ala | Glu | Leu | Asn | Glu | Gly | Lys | Cys | Ser | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Met | Lys | Ser | Leu | Glu |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Ala | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Thr | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
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<210> 47
<211> 284
<212> PRT
<213> Coturnix coturnix japonica
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<210> 48
<211> 284
<212> PRT
<213> Mus musculus
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-67-

| | | | | | | | | | | | | | | | |
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| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Ser | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | His | Ala | Leu | Asn | Asp | Met | Thr | Ser | Ile | | | | |
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<210> 49
 <211> 284
 <212> PRT
 <213> Rana temporaria

<400> 49

| | | | | | | | | | | | | | | | |
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| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Gly | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Lys | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Val | Ala | Met | Gln | Lys |
| | | 35 | | | | | 40 | | | | 45 | | | | |
| Lys | Met | Lys | Gly | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Leu | Lys | Asp | Glu | Glu | Lys | Ile | Glu | Leu | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Gly | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Ser | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Lys | Val | Leu | Thr | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Thr | Val | Ala | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | His | Ala | Leu | Asn | Asp | Met | Thr | Ser | Ile | | | | |
| | | 275 | | | | | 280 | | | | | | | | |

<210> 50
 <211> 284
 <212> PRT
 <213> Rattus norvegicus

| | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 50 | | | | | | | | | | | | | | | |
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Ala | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Arg | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Val | Ser | Leu | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Ser | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu |
| | | | | 165 | | | | 170 | | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | His | Ala | Leu | Lys | Asp | Met | Thr | Ser | Ile | | | | |
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<210> 51
 <211> 284
 <212> PRT
 <213> Xenopus laevis

| | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 51 | | | | | | | | | | | | | | | |
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
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| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Gly | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Lys | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Val | Ala | Leu | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ser | Asp | Lys | Lys | Ala | Thr | Asp |
| | 65 | | | | 70 | | | | | 75 | | | | | 80 |
| Ala | Glu | Gly | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ser | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Leu | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| | 145 | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Gly | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Ser | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Thr | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| | 225 | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Thr | Val | Ala | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | His | Ala | Leu | Asn | Asp | Met | Thr | Ser | Ile | | | | |
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<210> 52
 <211> 284
 <212> PRT
 <213> Gallus gallus

| | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 52 | | | | | | | | | | | | | | | |
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| Asn | Ala | Ile | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Gln | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Arg | Cys | Lys | Gln | Leu | Glu | Glu | Gln | Gln | Gly | Leu | Gln | Lys | |
| | | 35 | | | | | 40 | | | | 45 | | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Val | Glu | Lys | Tyr | Ser | Glu | Ser | Val |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Glu | Ala | Gln | Glu | Lys | Leu | Glu | Gln | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| | 65 | | | | 70 | | | | | 75 | | | | | 80 |
| Ala | Glu | Ala | Glu | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Met | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Met | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| | 145 | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Val | Leu | Glu | Gly | Glu | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ser | Glu | Glu | Arg | Ala | Glu | Val | Ala | Glu | Ser | Lys | Cys | Gly | Asp |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Ile | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Ala | Gln | Ala | Asp | Lys | Tyr | Ser | Thr | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Ile | Lys | Leu | Leu | Gly | Glu | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | |
| 225 | | | | 230 | | | | | 235 | | | | | | 240 | |
| Phe | Ala | Glu | Arg | Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu | |
| | | | 245 | | | | | 250 | | | | | 255 | | | |
| Glu | Asp | Glu | Val | Tyr | Ala | Gln | Lys | Met | Lys | Tyr | Lys | Ala | Ile | Ser | Glu | |
| | | 260 | | | | | | 265 | | | | 270 | | | | |
| Glu | Leu | Asp | Asn | Ala | Leu | Asn | Asp | Ile | Thr | Ser | Leu | | | | | |
| | 275 | | | | | | 280 | | | | | | | | | |

<210> 53
 <211> 284
 <212> PRT
 <213> Homo sapiens

| | | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| <400> 53 | | | | | | | | | | | | | | | | |
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Asn | Ala | Ile | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Gln | Ala | |
| | | 20 | | | | | 25 | | | | | | 30 | | | |
| Glu | Asp | Arg | Cys | Lys | Gln | Leu | Glu | Glu | Gln | Gln | Ala | Leu | Gln | Lys | | |
| | 35 | | | | | 40 | | | | 45 | | | | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Val | Glu | Lys | Tyr | Ser | Glu | Ser | Val | |
| | 50 | | | | 55 | | | | | 60 | | | | | | |
| Lys | Glu | Ala | Gln | Glu | Lys | Leu | Glu | Gln | Ala | Glu | Lys | Lys | Ala | Thr | Asp | |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | | |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu | |
| | | | 85 | | | | | 90 | | | | | 95 | | | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys | |
| | | 100 | | | | | 105 | | | | | | 110 | | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys | |
| | 115 | | | | | 120 | | | | | | 125 | | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Met | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln | |
| | 130 | | | | 135 | | | | | 140 | | | | | | |
| Glu | Met | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ser | Asp | Arg | |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | | |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Leu | Glu | Gly | Glu | Leu | |
| | | | 165 | | | | | 170 | | | | | 175 | | | |
| Glu | Arg | Ser | Glu | Glu | Arg | Ala | Glu | Val | Ala | Glu | Ser | Lys | Cys | Gly | Asp | |
| | | 180 | | | | | 185 | | | | | | 190 | | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Ile | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu | |
| | 195 | | | | | 200 | | | | | | 205 | | | | |
| Ala | Gln | Ala | Asp | Lys | Tyr | Ser | Thr | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Ile | Lys | Leu | Leu | Glu | Glu | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | |
| 225 | | | | 230 | | | | | 235 | | | | | | 240 | |
| Phe | Ala | Glu | Arg | Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu | |
| | | | 245 | | | | | 250 | | | | | 255 | | | |
| Glu | Asp | Glu | Val | Tyr | Ala | Gln | Lys | Met | Lys | Tyr | Lys | Ala | Ile | Ser | Glu | |
| | | 260 | | | | | | 265 | | | | 270 | | | | |
| Glu | Leu | Asp | Asn | Ala | Leu | Asn | Asp | Ile | Thr | Ser | Leu | | | | | |
| | 275 | | | | | | 280 | | | | | | | | | |

<210> 54
 <211> 284
 <212> PRT
 <213> Mus musculus

<400> 54

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Ile | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Gln | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Arg | Cys | Lys | Gln | Leu | Glu | Glu | Glu | Gln | Gln | Ala | Leu | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Val | Glu | Lys | Tyr | Ser | Glu | Ser | Val |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Gln | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Met | Lys | Asp | Glu | Glu | Lys | Met | Glu | Leu | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Met | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ser | Asp | Arg |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Leu | Glu | Gly | Glu | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ser | Glu | Glu | Arg | Ala | Glu | Val | Ala | Glu | Ser | Lys | Cys | Gly | Asp |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Ile | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Asp | Lys | Tyr | Ser | Thr | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Leu | Leu | Glu | Glu | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Ala | Lys | Leu | Glu | Lys | Thr | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Val | Tyr | Ala | Gln | Lys | Met | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | Asn | Ala | Leu | Asn | Asp | Ile | Thr | Ser | Leu | | | | |
| | | 275 | | | | | 280 | | | | | | | | |

<210> 55
 <211> 284
 <212> PRT
 <213> Sus scrofa

<400> 55

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Leu | Asp | Arg | Ala | Asp | Glu | Ala | Glu | Ala | Asp | Lys | Lys | Ala | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Arg | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Val | Ser | Leu | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Leu | Lys | Ala | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ala | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Glu | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Phe | Glu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Ser | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Leu | Tyr | Ala | Gln | Lys | Leu | Lys | Tyr | Lys | Ala | Ile | Ser | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Leu | Asp | His | Ala | Leu | Asn | Asp | Met | Thr | Ser | Ile | | | | |
| | | 275 | | | | | 280 | | | | | | | | |

<210> 56
 <211> 284
 <212> PRT
 <213> Gallus gallus

<400> 56

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Ala | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Glu | Arg | Ser | Lys | Gln | Leu | Glu | Asp | Glu | Leu | Val | Ala | Leu | Gln | Lys |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Lys | Leu | Lys | Gly | Thr | Glu | Asp | Glu | Leu | Asp | Lys | Tyr | Ser | Glu | Ser | Leu |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Lys | Asp | Ala | Gln | Glu | Lys | Leu | Glu | Leu | Ala | Asp | Lys | Lys | Ala | Thr | Asp |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Ala | Glu | Ser | Glu | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu |
| | | | | 85 | | | | 90 | | | | | 95 | | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ile | Glu | Asn | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Glu | Ala | Asp | Arg |
| 145 | | | | 150 | | | | | 155 | | | | | | 160 |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Gly | Asp | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Ser | Gln | Val | Arg | Gln |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Glu | Gln | Leu | Arg | Ile | Met | Asp | Gln | Thr | Leu | Lys | Ala | Leu | Met |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Ala | Glu | Asp | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Lys | Val | Leu | Thr | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Glu | Lys | Val | Ala | His | Ala | Lys | Glu | Glu | Asn | Leu | Asn | Met | His | Gln |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Met | Leu | Asp | Gln | Thr | Leu | Leu | Glu | Leu | Asn | Asn | Met | | | | |
| | | 275 | | | | | 280 | | | | | | | | |

<210> 57
 <211> 284
 <212> PRT
 <213> Coturnix coturnix japonica

<400> 57
 Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
 1 5 10 15
 Asn Ala Leu Asp Arg Ala Glu Gln Ala Asp Lys Lys Ala Ala
 20 25 30
 Glu Glu Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ala Leu Gln Lys
 35 40 45
 Lys Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ser Leu
 50 55 60
 Lys Asp Ala Gln Glu Lys Leu Glu Leu Ala Asp Lys Lys Ala Thr Asp
 65 70 75 80
 Ala Glu Ser Glu Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
 85 90 95
 Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
 100 105 110
 Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
 115 120 125
 Val Ile Glu Asn Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
 130 135 140
 Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Glu Ala Asp Arg
 145 150 155 160
 Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Gly Asp Leu
 165 170 175
 Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Ser Lys Cys Ala Glu
 180 185 190
 Leu Glu Glu Glu Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu
 195 200 205
 Ala Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu
 210 215 220
 Ile Lys Val Leu Thr Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
 225 230 235 240
 Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
 245 250 255
 Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Asn Met His Gln
 260 265 270
 Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
 275 280

<210> 58
 <211> 248
 <212> PRT
 <213> Xenopus laevis

<400> 58
 Met Ala Gly Ile Thr Ser Leu Glu Ala Val Lys Arg Lys Ile Lys Cys
 1 5 10 15
 Leu Gln Asp Gln Ala Asp Glu Ala Glu Glu Arg Ala Glu Lys Leu Gln
 20 25 30
 Arg Glu Arg Asp Met Glu Arg Lys Leu Arg Glu Ala Ala Glu Gly Asp
 35 40 45
 Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Leu Asp
 50 55 60
 Arg Ala Gln Glu Arg Leu Ser Thr Ala Leu Gln Lys Leu Glu Glu Ala
 65 70 75 80
 Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Asn
 85 90 95
 Arg Ala Leu Lys Asp Glu Glu Lys Met Glu Leu Gln Glu Ile Gln Leu

<210> 60
 <211> 284
 <212> PRT
 <213> Coturnix coturnix japonica

<400> 60
 Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
 1 5 10 15
 Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala
 20 25 30
 Glu Glu Arg Ser Lys Gln Leu Glu Asp Asp Ile Val Gln Leu Glu Lys
 35 40 45
 Gln Leu Arg Val Thr Glu Asp Ser Arg Asp Gln Val Leu Glu Glu Leu
 50 55 60
 His Lys Ser Glu Asp Ser Leu Leu Ser Ala Glu Ile Ala Ala Lys
 65 70 75 80
 Ala Glu Ser Glu Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
 85 90 95
 Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
 100 105 110
 Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
 115 120 125
 Val Ile Glu Asn Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
 130 135 140
 Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Glu Ala Asp Arg
 145 150 155 160
 Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Gly Asp Leu
 165 170 175
 Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Ser Lys Cys Ala Glu
 180 185 190
 Leu Glu Glu Glu Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu
 195 200 205
 Ala Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu
 210 215 220
 Ile Lys Val Leu Thr Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
 225 230 235 240
 Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
 245 250 255
 Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Asn Met His Gln
 260 265 270
 Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
 275 280

<210> 61
 <211> 227
 <212> PRT
 <213> Homo sapiens

<400> 61
 Cys Arg Leu Arg Ile Phe Leu Arg Thr Ala Ser Ser Glu His Leu His
 1 5 10 15
 Glu Arg Lys Leu Arg Glu Thr Ala Glu Ala Asp Val Ala Ser Leu Asn
 20 25 30
 Arg Arg Ile Gln Leu Val Glu Glu Glu Leu Asp Arg Ala Gln Glu Arg
 35 40 45
 Leu Ala Thr Val Leu Gln Lys Leu Glu Glu Ala Glu Lys Ala Ala Asp
 50 55 60
 Glu Ser Glu Arg Gly Met Lys Val Ile Glu Ser Arg Ala Gln Lys Asp
 65 70 75 80
 Glu Glu Lys Met Glu Ile Gln Glu Ile Gln Leu Lys Glu Ala Lys His
 85 90 95
 Ile Ala Glu Asp Ala Asp Arg Lys Tyr Glu Glu Val Ala Arg Lys Leu

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Val | Ile | Ile | Glu | Ser | Asp | Leu | Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| Ser | Glu | Gly | Gln | Val | Arg | Gln | Leu | Glu | Glu | Gln | Leu | Arg | Ile | Met | Asp | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Ser | Asp | Leu | Glu | Ser | Ile | Asn | Ala | Ala | Glu | Asp | Lys | Tyr | Ser | Gln | Lys | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Glu | Asp | Arg | Tyr | Glu | Glu | Ile | Lys | Val | Leu | Ser | Asp | Lys | Leu | Lys | | |
| | | | 165 | | | | | 170 | | | | | | 175 | | |
| Glu | Ala | Glu | Thr | Arg | Ala | Glu | Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Glu | Lys | Ser | Ile | Asp | Asp | Leu | Glu | Glu | Lys | Val | Ala | His | Ala | Lys | Glu | |
| | 195 | | | | | 200 | | | | | 205 | | | | | |
| Glu | Asn | Leu | Ser | Met | His | Gln | Met | Leu | Asp | Gln | Thr | Leu | Leu | Glu | Leu | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Asn | Asn | Met | | | | | | | | | | | | | | |
| 225 | | | | | | | | | | | | | | | | |

<210> 62
 <211> 284
 <212> PRT
 <213> Rattus norvegicus

| | | | | | | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| <400> 62 | | | | | | | | | | | | | | | | |
| Met | Asp | Ala | Ile | Lys | Lys | Lys | Met | Gln | Met | Leu | Lys | Leu | Asp | Lys | Glu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Asn | Ala | Leu | Asp | Arg | Ala | Glu | Gln | Ala | Glu | Ala | Asp | Lys | Lys | Ala | Ala | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Glu | Asp | Arg | Ser | Lys | Gln | Leu | Glu | Glu | Asp | Ile | Ser | Ala | Lys | Glu | Lys | |
| | 35 | | | | | 40 | | | | | | 45 | | | | |
| Leu | Leu | Arg | Ala | Ser | Glu | Asp | Glu | Arg | Asp | Arg | Val | Leu | Glu | Glu | Leu | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| His | Lys | Ala | Glu | Asp | Ser | Leu | Leu | Ala | Ala | Asp | Glu | Thr | Ala | Ala | Lys | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| Ala | Glu | Ala | Asp | Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Glu | Glu | Leu | Asp | Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Leu | Glu | Glu | Ala | Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys | |
| | 115 | | | | | | 120 | | | | | 125 | | | | |
| Val | Ile | Glu | Ser | Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln | |
| | 130 | | | | | 135 | | | | | | 140 | | | | |
| Glu | Ile | Gln | Leu | Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Lys | Tyr | Glu | Glu | Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Glu | Arg | Ala | Glu | Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Leu | Glu | Glu | Glu | Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu | |
| | 195 | | | | | | 200 | | | | | 205 | | | | |
| Ala | Gln | Ala | Glu | Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Ile | Lys | Val | Leu | Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 | |
| Phe | Ala | Glu | Arg | Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| Glu | Glu | Lys | Val | Ala | His | Ala | Lys | Glu | Glu | Asn | Leu | Ser | Met | His | Gln | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| Met | Leu | His | Gln | Thr | Leu | Leu | Glu | Leu | Asn | Asn | Met | | | | | |
| | 275 | | | | | | 280 | | | | | | | | | |

<210> 63

<211> 281
 <212> PRT
 <213> Rattus norvegicus

<400> 63
 Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
 1 5 10 15
 Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala
 20 25 30
 Glu Asp Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ser Leu Gln Lys
 35 40 45
 Lys Leu Lys Ala Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ala Leu
 50 55 60
 Lys Asp Ala Gln Glu Lys Leu Glu Leu Ala Glu Lys Lys Ala Thr Asp
 65 70 75 80
 Ala Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
 85 90 95
 Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
 100 105 110
 Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
 115 120 125
 Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
 130 135 140
 Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg
 145 150 155 160
 Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu
 165 170 175
 Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Lys Cys Ala Glu
 180 185 190
 Leu Glu Glu Glu Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu
 195 200 205
 Ala Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu
 210 215 220
 Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
 225 230 235 240
 Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
 245 250 255
 Glu Asp Gln Leu Tyr His Gln Leu Glu Gln Asn Arg Arg Leu Thr Asn
 260 265 270
 Glu Leu Lys Leu Ala Leu Asn Glu Asp
 275 280

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 <211> 251
 <212> PRT
 <213> Rattus norvegicus

<400> 64
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 35 40 45
 Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Glu Leu Asp
 50 55 60
 Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala
 65 70 75 80
 Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Ser
 85 90 95
 Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln Glu Ile Gln Leu
 100 105 110

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg | Lys | Tyr | Glu | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu | Glu | Arg | Ala | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu | Leu | Glu | Glu | Glu |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 |
| Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu | Ala | Gln | Ala | Glu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | Ile | Lys | Val | Leu |
| | | | 180 | | | | 185 | | | | | | 190 | | |
| Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | Phe | Ala | Glu | Arg |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu | Glu | Asp | Lys | Phe |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Leu | Cys | Phe | Ser | Pro | Pro | Lys | Thr | Pro | Ser | Ser | Ser | Arg | Met | Ser | His |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Ser | Glu | Leu | Cys | Ile | Cys | Leu | Leu | Ser | Ser | | | | | |
| | | | | 245 | | | | | 250 | | | | | | |

<210> 65
 <211> 245
 <212> PRT
 <213> Rattus norvegicus

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| <400> 65 | | | | | | | | | | | | | | | |
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| Leu | Gln | Glu | Gln | Ala | Asp | Ala | Ala | Glu | Glu | Arg | Ala | Gly | Ser | Leu | Gln |
| | | | 20 | | | | 25 | | | | | 30 | | | |
| Arg | Glu | Leu | Asp | Gln | Glu | Arg | Lys | Leu | Arg | Glu | Thr | Ala | Glu | Ala | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Val | Ala | Ser | Leu | Asn | Arg | Arg | Ile | Gln | Leu | Val | Glu | Glu | Glu | Leu | Asp |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Arg | Ala | Gln | Glu | Arg | Leu | Ala | Thr | Ala | Leu | Gln | Lys | Leu | Glu | Glu | Ala |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Glu | Lys | Ala | Ala | Asp | Glu | Ser | Glu | Arg | Gly | Met | Lys | Val | Ile | Glu | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Arg | Ala | Gln | Lys | Asp | Glu | Glu | Lys | Met | Glu | Ile | Gln | Glu | Ile | Gln | Leu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Lys | Glu | Ala | Lys | His | Ile | Ala | Glu | Asp | Ala | Asp | Arg | Lys | Tyr | Glu | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Ala | Arg | Lys | Leu | Val | Ile | Ile | Glu | Ser | Asp | Leu | Glu | Arg | Ala | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Arg | Ala | Glu | Leu | Ser | Glu | Gly | Lys | Cys | Ala | Glu | Leu | Glu | Glu | Glu |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 |
| Leu | Lys | Thr | Val | Thr | Asn | Asn | Leu | Lys | Ser | Leu | Glu | Ala | Gln | Ala | Glu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Lys | Tyr | Ser | Gln | Lys | Glu | Asp | Lys | Tyr | Glu | Glu | Glu | Ile | Lys | Val | Leu |
| | | | 180 | | | | 185 | | | | | | 190 | | |
| Ser | Asp | Lys | Leu | Lys | Glu | Ala | Glu | Thr | Arg | Ala | Glu | Phe | Ala | Glu | Arg |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ser | Val | Thr | Lys | Leu | Glu | Lys | Ser | Ile | Asp | Asp | Leu | Glu | Asp | Gln | Leu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Tyr | His | Gln | Leu | Glu | Gln | Asn | Arg | Arg | Leu | Thr | Asn | Glu | Leu | Lys | Leu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Leu | Asn | Glu | Asp | | | | | | | | | | | |
| | | | | 245 | | | | | | | | | | | |

<210> 66
 <211> 961
 <212> PRT
 <213> Bos taurus

<400> 66

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Phe | Leu | Arg | Gly | Val | Met | Gly | Gly | Gln | Ser | Ala | Gly | Pro | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| His | Thr | Glu | Ala | Glu | Thr | Ile | Gln | Lys | Leu | Cys | Asp | Arg | Val | Ala | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Thr | Leu | Leu | Asp | Asp | Arg | Arg | Asn | Ala | Val | Arg | Ala | Leu | Lys | Ser |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Ser | Lys | Lys | Tyr | Arg | Leu | Glu | Val | Gly | Ile | Gln | Ala | Met | Glu | His |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Leu | Ile | His | Val | Leu | Gln | Thr | Asp | Arg | Ser | Asp | Ser | Glu | Ile | Ile | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Tyr | Ala | Leu | Asp | Thr | Leu | Tyr | Asn | Ile | Ile | Ser | Asn | Asp | Glu | Glu | Glu |
| | | | | 85 | | | | 90 | | | | | 95 | | |
| Glu | Val | Glu | Glu | Asn | Ser | Thr | Arg | Gln | Ser | Glu | Asp | Leu | Gly | Ser | Gln |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Phe | Thr | Glu | Ile | Phe | Ile | Lys | Gln | Gln | Glu | Asn | Val | Thr | Leu | Leu | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ser | Leu | Leu | Glu | Glu | Phe | Asp | Phe | His | Val | Arg | Trp | Pro | Gly | Val | Lys |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Leu | Leu | Thr | Ser | Leu | Leu | Lys | Gln | Leu | Gly | Pro | Gln | Val | Gln | Gln | Ile |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ile | Leu | Val | Ser | Pro | Met | Gly | Val | Ser | Arg | Leu | Met | Asp | Leu | Leu | Ala |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Asp | Ser | Arg | Glu | Val | Ile | Arg | Asn | Asp | Gly | Val | Leu | Leu | Leu | Gln | Ala |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Thr | Arg | Ser | Asn | Gly | Ala | Ile | Gln | Lys | Ile | Val | Ala | Phe | Glu | Asn |
| | | 195 | | | | 200 | | | | | | 205 | | | |
| Ala | Phe | Glu | Arg | Leu | Leu | Asp | Ile | Ile | Thr | Glu | Glu | Gly | Asn | Ser | Asp |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Gly | Gly | Ile | Val | Val | Glu | Asp | Cys | Leu | Ile | Leu | Leu | Gln | Asn | Leu | Leu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Asn | Asn | Asn | Ser | Asn | Gln | Asn | Phe | Phe | Lys | Glu | Gly | Ser | Tyr | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gln | Arg | Met | Lys | Pro | Trp | Phe | Glu | Val | Gly | Asp | Glu | Asn | Ser | Gly | Trp |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ser | Ala | Gln | Lys | Val | Thr | Asn | Leu | His | Leu | Met | Leu | Gln | Leu | Val | Arg |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Val | Leu | Val | Ser | Pro | Asn | Asn | Pro | Pro | Gly | Ala | Thr | Ser | Ser | Cys | Gln |
| | | 290 | | | | 295 | | | | | | 300 | | | |
| Lys | Ala | Met | Phe | Gln | Cys | Gly | Leu | Leu | Gln | Gln | Leu | Cys | Thr | Ile | Leu |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Met | Ala | Thr | Gly | Val | Pro | Ala | Asp | Ile | Leu | Thr | Glu | Thr | Ile | Asn | Thr |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Val | Ser | Glu | Val | Ile | Arg | Gly | Cys | Gln | Val | Asn | Gln | Asp | Tyr | Phe | Ala |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Ser | Val | Asn | Ala | Pro | Ser | Asn | Pro | Pro | Arg | Pro | Ala | Ile | Val | Val | Leu |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Leu | Met | Ser | Met | Val | Asn | Glu | Arg | Gln | Pro | Phe | Val | Leu | Arg | Cys | Ala |
| | | 370 | | | | 375 | | | | | 380 | | | | |
| Val | Leu | Tyr | Cys | Phe | Gln | Cys | Phe | Leu | Tyr | Lys | Asn | Gln | Lys | Gly | Gln |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Gly | Glu | Ile | Val | Ser | Thr | Leu | Leu | Pro | Ser | Thr | Ile | Asp | Ala | Thr | Gly |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Asn | Thr | Val | Ser | Ala | Gly | Gln | Leu | Leu | Cys | Gly | Gly | Leu | Phe | Ser | Thr |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asp | Ser | Leu | Ser | Asn | Trp | Cys | Ala | Ala | Val | Ala | Leu | Ala | His | Ala | Leu |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Gln | Glu | Asn | Ala | Thr | Gln | Lys | Glu | Gln | Leu | Leu | Arg | Val | Gln | Leu | Ala |
| | | 450 | | | | 455 | | | | | 460 | | | | |
| Thr | Ser | Ile | Gly | Asn | Pro | Pro | Val | Ser | Leu | Leu | Gln | Gln | Cys | Thr | Asn |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Ile | Leu | Ser | Gln | Gly | Ser | Lys | Ile | Gln | Thr | Arg | Val | Gly | Leu | Leu | Met |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 485 | | | | | 490 | | | | | 495 | | | |
| Leu | Leu | Cys | Thr | Trp | Leu | Ser | Asn | Cys | Pro | Ile | Ala | Val | Thr | His | Phe | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | |
| Leu | His | Asn | Ser | Ala | Asn | Val | Pro | Phe | Leu | Thr | Gly | Gln | Ile | Ala | Glu | | |
| | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Asn | Leu | Gly | Glu | Glu | Glu | Gln | Leu | Val | Gln | Gly | Leu | Cys | Ala | Leu | Leu | | |
| | 530 | | | | | 535 | | | | | 540 | | | | | | |
| Leu | Gly | Ile | Ser | Ile | Tyr | Phe | Asn | Asp | Asn | Ser | Leu | Glu | Thr | Tyr | Met | | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | | |
| Lys | Glu | Lys | Leu | Lys | Gln | Leu | Ile | Glu | Lys | Arg | Ile | Gly | Lys | Glu | Asn | | |
| | | | | 565 | | | | | 570 | | | | | 575 | | | |
| Phe | Ile | Glu | Lys | Leu | Gly | Phe | Ile | Ser | Lys | His | Glu | Leu | Tyr | Ser | Arg | | |
| | | | 580 | | | | | 585 | | | | | 590 | | | | |
| Ala | Ser | Gln | Lys | Pro | Gln | Pro | Asn | Phe | Pro | Ser | Pro | Glu | Tyr | Met | Ile | | |
| | | 595 | | | | | 600 | | | | | 605 | | | | | |
| Phe | Asp | His | Glu | Phe | Thr | Lys | Leu | Val | Lys | Glu | Leu | Glu | Gly | Val | Ile | | |
| | 610 | | | | | 615 | | | | | 620 | | | | | | |
| Thr | Lys | Ala | Ile | Tyr | Lys | Ser | Ser | Glu | Glu | Asp | Lys | Lys | Glu | Glu | Glu | | |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 | | |
| Val | Lys | Lys | Thr | Leu | Glu | Gln | His | Asp | Ser | Ile | Val | Thr | His | Tyr | Lys | | |
| | | | | 645 | | | | | 650 | | | | | 655 | | | |
| Asn | Met | Ile | Arg | Glu | Gln | Asp | Leu | Gln | Leu | Glu | Glu | Leu | Lys | Gln | Gln | | |
| | | | 660 | | | | | 665 | | | | | 670 | | | | |
| Ile | Ser | Thr | Leu | Lys | Cys | Gln | Asn | Glu | Gln | Leu | Gln | Thr | Ala | Val | Thr | | |
| | | 675 | | | | | 680 | | | | | 685 | | | | | |
| Gln | Gln | Val | Ser | Gln | Ile | Gln | Gln | His | Lys | Asp | Gln | Tyr | Asn | Leu | Leu | | |
| | 690 | | | | | 695 | | | | | 700 | | | | | | |
| Lys | Val | Gln | Leu | Gly | Lys | Asp | Ser | Gln | His | Gln | Gly | Pro | Tyr | Thr | Asp | | |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 | | |
| Gly | Ala | Gln | Met | Asn | Gly | Val | Gln | Pro | Glu | Glu | Ile | Ser | Arg | Leu | Arg | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | |
| Glu | Glu | Ile | Glu | Glu | Leu | Lys | Ser | Asn | Arg | Glu | Leu | Leu | Gln | Ser | Gln | | |
| | | | 740 | | | | | 745 | | | | | 750 | | | | |
| Leu | Ala | Glu | Lys | Asp | Ser | Leu | Ile | Glu | Asn | Leu | Lys | Ser | Ser | Gln | Leu | | |
| | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Ser | Pro | Gly | Thr | Asn | Glu | Gln | Ser | Ser | Ala | Thr | Ala | Gly | Asp | Ser | Glu | | |
| | | 770 | | | | 775 | | | | | 780 | | | | | | |
| Gln | Ile | Ala | Glu | Leu | Lys | Gln | Glu | Leu | Ala | Thr | Leu | Lys | Ser | Gln | Leu | | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | | |
| Asn | Ser | Gln | Ser | Val | Glu | Ile | Thr | Lys | Leu | Gln | Thr | Glu | Lys | Gln | Glu | | |
| | | | | 805 | | | | | 810 | | | | | 815 | | | |
| Leu | Leu | Gln | Lys | Thr | Glu | Ala | Phe | Ala | Lys | Ser | Ala | Pro | Val | Pro | Gly | | |
| | | | 820 | | | | | 825 | | | | | 830 | | | | |
| Glu | Ser | Glu | Thr | Val | Ile | Ala | Thr | Lys | Thr | Thr | Asp | Val | Glu | Gly | Arg | | |
| | | 835 | | | | | 840 | | | | | 845 | | | | | |
| Leu | Ser | Ala | Leu | Leu | Gln | Glu | Thr | Lys | Glu | Leu | Lys | Asn | Glu | Ile | Lys | | |
| | | 850 | | | | 855 | | | | | 860 | | | | | | |
| Ala | Leu | Ser | Glu | Glu | Arg | Thr | Ala | Ile | Lys | Glu | Gln | Leu | Asp | Ser | Ser | | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | | |
| Asn | Ser | Thr | Ile | Ala | Ile | Leu | Gln | Asn | Glu | Lys | Asn | Lys | Leu | Glu | Val | | |
| | | | | 885 | | | | | 890 | | | | | 895 | | | |
| Asp | Ile | Thr | Asp | Ser | Lys | Lys | Glu | Gln | Asp | Asp | Leu | Leu | Val | Leu | Leu | | |
| | | | 900 | | | | | 905 | | | | | 910 | | | | |
| Ala | Asp | Gln | Asp | Gln | Lys | Ile | Phe | Ser | Leu | Lys | Asn | Lys | Leu | Lys | Glu | | |
| | | 915 | | | | | 920 | | | | | 925 | | | | | |
| Leu | Gly | His | Pro | Val | Glu | Glu | Glu | Asp | Glu | Leu | Glu | Ser | Gly | Asp | Gln | | |
| | 930 | | | | | 935 | | | | | 940 | | | | | | |
| Asp | Asp | Glu | Asp | Asp | Glu | Asp | Glu | Asp | Asp | Gly | Lys | Glu | Gln | Gly | His | | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | | |
| Ile | | | | | | | | | | | | | | | | | |

<210> 67
 <211> 959
 <212> PRT
 <213> Rattus norvegicus

<400> 67
 Met Asn Phe Leu Arg Gly Val Met Gly Gly Gln Ser Ala Gly Pro Gln
 1 5 10 15
 His Thr Glu Ala Glu Thr Ile Gln Lys Leu Cys Asp Arg Val Ala Ser
 20 25 30
 Ser Thr Leu Leu Asp Asp Arg Arg Asn Ala Val Arg Ala Leu Lys Ser
 35 40 45
 Leu Ser Lys Lys Tyr Arg Leu Glu Val Gly Ile Gln Ala Met Glu His
 50 55 60
 Leu Ile His Val Leu Gln Thr Asp Arg Ser Asp Ser Glu Ile Ile Ala
 65 70 75 80
 Tyr Ala Leu Asp Thr Leu Tyr Asn Ile Ile Ser Asn Asp Glu Glu Glu
 85 90 95
 Glu Val Glu Glu Asn Ser Thr Arg Gln Ser Glu Asp Leu Gly Ser Gln
 100 105 110
 Phe Thr Glu Ile Phe Ile Lys Gln Pro Glu Asn Val Thr Leu Leu Leu
 115 120 125
 Ser Leu Leu Glu Glu Phe Asp Phe His Val Arg Trp Pro Gly Val Arg
 130 135 140
 Leu Leu Thr Ser Leu Leu Lys Gln Leu Gly Pro Pro Val Gln Gln Ile
 145 150 155 160
 Ile Leu Val Ser Pro Met Gly Val Ser Lys Leu Met Asp Leu Leu Ala
 165 170 175
 Asp Ser Arg Glu Ile Ile Arg Asn Asp Gly Val Leu Leu Leu Gln Ala
 180 185 190
 Leu Thr Arg Ser Asn Gly Ala Ile Gln Lys Ile Val Ala Phe Glu Asn
 195 200 205
 Ala Phe Glu Arg Leu Leu Asp Ile Ile Thr Glu Glu Gly Asn Ser Asp
 210 215 220
 Gly Gly Ile Val Val Glu Asp Cys Leu Ile Leu Leu Gln Asn Leu Leu
 225 230 235 240
 Lys Asn Asn Asn Ser Asn Gln Asn Phe Phe Lys Glu Gly Ser Tyr Ile
 245 250 255
 Gln Arg Met Lys Ala Trp Phe Glu Val Gly Asp Glu Asn Pro Gly Trp
 260 265 270
 Ser Ala Gln Lys Val Thr Asn Leu His Leu Met Leu Gln Leu Val Arg
 275 280 285
 Val Leu Val Ser Pro Thr Asn Pro Pro Gly Ala Thr Ser Ser Cys Gln
 290 295 300
 Lys Ala Met Phe Gln Cys Gly Leu Leu Gln Gln Leu Cys Thr Ile Leu
 305 310 315 320
 Met Ala Thr Gly Ile Pro Ala Asp Ile Leu Thr Glu Thr Ile Asn Thr
 325 330 335
 Val Ser Glu Val Ile Arg Gly Cys Gln Val Asn Gln Asp Tyr Phe Ala
 340 345 350
 Ser Val Asn Ala Pro Ser Asn Pro Pro Arg Pro Ala Ile Val Val Leu
 355 360 365
 Leu Met Ser Met Val Asn Glu Arg Gln Pro Phe Val Leu Arg Cys Ala
 370 375 380
 Val Leu Tyr Cys Phe Gln Cys Phe Leu Tyr Lys Asn Glu Lys Gly Gln
 385 390 395 400
 Gly Glu Ile Val Ala Thr Leu Leu Pro Ser Thr Ile Asp Ala Thr Gly
 405 410 415
 Asn Ser Val Ser Ala Gly Gln Leu Leu Cys Gly Gly Leu Phe Ser Thr
 420 425 430
 Asp Ser Leu Ser Asn Trp Cys Ala Ala Val Ala Leu Ala His Ala Leu
 435 440 445

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Asn | Ala | Thr | Gln | Lys | Glu | Gln | Leu | Leu | Arg | Val | Gln | Leu | Ala |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Thr | Ser | Ile | Gly | Asn | Pro | Pro | Val | Ser | Leu | Leu | Gln | Gln | Cys | Thr | Asn |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Ile | Leu | Ser | Gln | Gly | Ser | Lys | Ile | Gln | Thr | Arg | Val | Gly | Leu | Leu | Met |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Leu | Leu | Cys | Thr | Trp | Leu | Ser | Asn | Cys | Pro | Ile | Ala | Val | Thr | His | Phe |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Leu | His | Asn | Ser | Ala | Asn | Val | Pro | Phe | Leu | Thr | Gly | Gln | Ile | Ala | Glu |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Asn | Leu | Gly | Glu | Glu | Glu | Gln | Leu | Val | Gln | Gly | Leu | Cys | Ala | Leu | Leu |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Leu | Gly | Ile | Ser | Ile | Tyr | Phe | Asn | Asp | Asn | Ser | Leu | Glu | Asn | Tyr | Thr |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Lys | Glu | Lys | Leu | Lys | Gln | Leu | Ile | Glu | Lys | Arg | Ile | Gly | Lys | Glu | Asn |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Tyr | Ile | Glu | Lys | Leu | Gly | Phe | Ile | Ser | Lys | His | Glu | Leu | Tyr | Ser | Arg |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ala | Ser | Gln | Lys | Pro | Gln | Pro | Asn | Phe | Pro | Ser | Pro | Glu | Tyr | Met | Ile |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Phe | Asp | His | Glu | Phe | Thr | Lys | Leu | Val | Lys | Glu | Leu | Glu | Gly | Val | Ile |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Thr | Lys | Ala | Ile | Tyr | Lys | Ser | Ser | Glu | Glu | Asp | Lys | Lys | Glu | Glu | Glu |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Val | Lys | Lys | Thr | Leu | Glu | Gln | His | Asp | Asn | Ile | Val | Thr | His | Tyr | Lys |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Asn | Met | Ile | Arg | Glu | Gln | Asp | Leu | Gln | Leu | Glu | Glu | Leu | Lys | Gln | Gln |
| | | 660 | | | | | | 665 | | | | | 670 | | |
| Val | Ser | Thr | Leu | Lys | Cys | Gln | Asn | Glu | Gln | Leu | Gln | Thr | Ala | Val | Thr |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Gln | Gln | Ala | Ser | Gln | Ile | Gln | Gln | His | Lys | Asp | Gln | Tyr | Asn | Leu | Leu |
| | 690 | | | | | 695 | | | | | 700 | | | | |
| Lys | Val | Gln | Leu | Gly | Lys | Asp | Asn | His | His | Gln | Gly | Ser | His | Ser | Asp |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
| Gly | Ala | Gln | Val | Asn | Gly | Ile | Gln | Pro | Glu | Glu | Ile | Ser | Arg | Leu | Arg |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Glu | Glu | Ile | Glu | Glu | Leu | Arg | Ser | His | Gln | Val | Leu | Leu | Gln | Ser | Gln |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Leu | Ala | Glu | Lys | Asp | Thr | Val | Ile | Glu | Asn | Leu | Arg | Ser | Ser | Gln | Val |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Ser | Gly | Met | Ser | Glu | Gln | Ala | Leu | Ala | Thr | Cys | Ser | Pro | Arg | Asp | Ala |
| | 770 | | | | | 775 | | | | | 780 | | | | |
| Glu | Gln | Val | Ala | Glu | Leu | Lys | Gln | Glu | Leu | Ser | Ala | Leu | Lys | Ser | Gln |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Leu | Cys | Ser | Gln | Ser | Leu | Glu | Ile | Thr | Arg | Leu | Gln | Thr | Glu | Asn | Ser |
| | | | | 805 | | | | | 810 | | | | | 815 | |
| Glu | Leu | Gln | Gln | Arg | Ala | Glu | Thr | Leu | Ala | Lys | Ser | Val | Pro | Val | Glu |
| | | | | 820 | | | | 825 | | | | | 830 | | |
| Gly | Glu | Ser | Glu | Leu | Val | Thr | Ala | Ala | Lys | Thr | Thr | Asp | Val | Glu | Gly |
| | | 835 | | | | | 840 | | | | | 845 | | | |
| Arg | Leu | Ser | Ala | Leu | Leu | Gln | Glu | Thr | Lys | Glu | Leu | Lys | Asn | Glu | Ile |
| | 850 | | | | | 855 | | | | | 860 | | | | |
| Lys | Ala | Leu | Ser | Glu | Glu | Arg | Thr | Ala | Ile | Gln | Lys | Gln | Leu | Asp | Ser |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 |
| Ser | Asn | Ser | Thr | Ile | Ala | Ile | Leu | Gln | Thr | Glu | Lys | Asp | Lys | Leu | Tyr |
| | | | | 885 | | | | | 890 | | | | | 895 | |
| Leu | Glu | Val | Thr | Asp | Ser | Lys | Lys | Glu | Gln | Asp | Asp | Leu | Leu | Val | Leu |
| | | | 900 | | | | | 905 | | | | | 910 | | |
| Leu | Ala | Asp | Gln | Asp | Gln | Lys | Ile | Leu | Ser | Leu | Lys | Ser | Lys | Leu | Lys |
| | | 915 | | | | | 920 | | | | | 925 | | | |
| Asp | Leu | Gly | His | Pro | Val | Glu | Glu | Glu | Asp | Glu | Ser | Gly | Asp | Gln | Glu |
| | 930 | | | | | 935 | | | | | 940 | | | | |

Asp Asp Asp Asp Glu Leu Asp Asp Gly Asp Arg Asp Gln Asp Ile
 945 950 955

<210> 68
 <211> 1139
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 <213> Caenorhabditis elegans

<400> 68
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 20 25 30
 Arg Asp Asn Ile Glu Gln Leu Met Met Asn Met Leu Glu Asp Arg Asp
 35 40 45
 Lys Leu Gln Glu Gln Leu Glu Asn Tyr Lys Val Gln Leu Glu Asn Ala
 50 55 60
 Gly Leu Arg Thr Lys Glu Val Glu Lys Glu Arg Asp Met Met Lys Arg
 65 70 75 80
 Gln Phe Glu Val His Thr Gln Asn Leu Pro Gln Glu Leu Gln Thr Met
 85 90 95
 Thr Arg Glu Leu Cys Leu Leu Lys Glu Gln Leu Leu Glu Lys Asp Glu
 100 105 110
 Glu Ile Val Glu Leu Lys Ala Glu Arg Asn Asn Thr Arg Leu Leu Leu
 115 120 125
 Glu His Leu Glu Cys Leu Val Ser Arg His Glu Arg Ser Leu Arg Met
 130 135 140
 Thr Val Met Lys Arg Gln Ala Gln Asn His Ala Gly Val Ser Ser Glu
 145 150 155 160
 Val Glu Val Leu Lys Ala Leu Lys Ser Leu Phe Glu His His Lys Ala
 165 170 175
 Leu Asp Glu Lys Val Arg Glu Arg Leu Arg Val Ala Met Glu Arg Val
 180 185 190
 Ala Thr Leu Glu Glu Glu Leu Ser Thr Lys Gly Asp Glu Asn Ser Ser
 195 200 205
 Leu Lys Ala Arg Ile Ala Thr Tyr Ala Ala Glu Ala Glu Glu Ala Met
 210 215 220
 Ala Ser Asn Ala Pro Ile Asn Gly Ser Ile Ser Ser Glu Ser Ala Asn
 225 230 235 240
 Arg Leu Ile Glu Met Gln Glu Ala Leu Glu Arg Met Lys Thr Glu Leu
 245 250 255
 Ala Asn Ser Leu Lys Gln Ser Thr Glu Ile Thr Thr Arg Asn Ala Glu
 260 265 270
 Leu Glu Asp Gln Leu Thr Glu Asp Ala Arg Glu Lys His Ala Ala Gln
 275 280 285
 Glu Ser Ile Val Arg Leu Lys Asn Gln Ile Cys Glu Leu Asp Ala Gln
 290 295 300
 Arg Thr Asp Gln Glu Thr Arg Ile Thr Thr Phe Glu Ser Arg Phe Leu
 305 310 315 320
 Thr Ala Gln Arg Glu Ser Thr Cys Ile Arg Asp Leu Asn Asp Lys Leu
 325 330 335
 Glu His Gln Leu Ala Asn Lys Asp Ala Ala Val Arg Leu Asn Glu Glu
 340 345 350
 Lys Val His Ser Leu Gln Glu Arg Leu Glu Leu Ala Glu Lys Gln Leu
 355 360 365
 Ala Gln Ser Leu Lys Lys Ala Glu Ser Leu Pro Ser Val Glu Ala Glu
 370 375 380
 Leu Gln Gln Arg Met Glu Ala Leu Thr Ala Ala Glu Gln Lys Ser Val
 385 390 395 400
 Ser Ala Glu Glu Arg Ile Gln Arg Leu Asp Arg Asn Ile Gln Glu Leu
 405 410 415
 Ser Ala Glu Leu Glu Arg Ala Val Gln Arg Glu Arg Met Asn Glu Glu

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | His | Arg | Leu | Ala | Met | Ala | Arg | Asp | Ser | Leu | Gln | Leu | Gln | Val | Ser |
| 210 | | | | | | 215 | | | | | 220 | | | | |
| Val | Leu | Ser | Glu | Gln | Val | Gly | Ala | Gln | Lys | Glu | Lys | Ile | Lys | Asp | Leu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Glu | Thr | Val | Ile | Ala | Leu | Lys | Arg | Asn | Asn | Leu | Thr | Ser | Thr | Glu | Glu |
| | | | | 245 | | | | 250 | | | | | | 255 | |
| Leu | Leu | Gln | Asp | Lys | Tyr | His | Arg | Ile | Asp | Glu | Cys | Gln | Glu | Leu | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ser | Lys | Lys | Met | Asp | Leu | Leu | Ala | Glu | Val | Ser | Ser | Leu | Lys | Leu | Arg |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Tyr | Ala | Thr | Leu | Glu | Arg | Glu | Lys | Asn | Glu | Thr | Glu | Lys | Lys | Leu | Arg |
| 290 | | | | | | 295 | | | | | 300 | | | | |
| Leu | Ser | Gln | Asn | Glu | Met | Asp | His | Val | Asn | Gln | Ser | Met | His | Gly | Met |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Val | Val | Gln | Gln | Gln | Leu | Ala | His | His | Thr | Asn | Gly | His | Ser | Ser | Gly |
| | | | | 325 | | | | | 330 | | | | | | 335 |
| Gly | Tyr | Met | Ser | Pro | Leu | Arg | Glu | His | Arg | Ser | Glu | Lys | Asn | Asp | Asp |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Glu | Met | Ser | Gln | Leu | Arg | Thr | Ala | Val | Gln | Arg | Leu | Met | Ala | Asp | Asn |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Glu | His | Lys | Ser | Leu | Gln | Ile | Asn | Thr | Leu | Arg | Asn | Ala | Leu | Asp | Glu |
| 370 | | | | | | 375 | | | | | 380 | | | | |
| Gln | Met | Arg | Ser | Arg | Ser | Gln | Gln | Glu | Asp | Phe | Tyr | Ala | Ser | Gln | Arg |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Asn | Tyr | Thr | Asp | Asn | Phe | Asp | Val | Asn | Ala | Gln | Ile | Arg | Arg | Ile | Leu |
| | | | | 405 | | | | 410 | | | | | | 415 | |
| Met | Asp | Glu | Pro | Ser | Asp | Ser | Met | Ser | His | Ser | Thr | Ser | Phe | Pro | Val |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Ser | Leu | Ser | Ser | Thr | Thr | Ser | Asn | Gly | Lys | Gly | Pro | Arg | Ser | Thr | Val |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Gln | Ser | Ser | Ser | Ser | Tyr | Asn | Ser | Ser | Leu | Ser | Ala | Val | Ser | Pro | Gln |
| 450 | | | | | | 455 | | | | | 460 | | | | |
| His | Asn | Trp | Ser | Ser | Ala | Gly | Ala | Gly | Thr | Pro | Arg | Gln | Leu | His | Pro |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Ile | Gly | Gly | Asn | Gln | Arg | Val | Asn | Asn | Ile | Thr | Ser | Ala | Gln | Tyr | Cys |
| | | | 485 | | | | | 490 | | | | | | 495 | |
| Ser | Pro | Ser | Pro | Pro | Ala | Ala | Arg | Gln | Leu | Ala | Ala | Glu | Leu | Asp | Glu |
| | | | 500 | | | | | 505 | | | | 510 | | | |
| Leu | Arg | Arg | Asn | Gly | Asn | Glu | Gly | Ala | Asn | His | Asn | Tyr | Ser | Ser | Ala |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Ser | Leu | Pro | Arg | Gly | Val | Gly | Lys | Ala | Ser | Ser | Thr | Leu | Thr | Leu | Pro |
| 530 | | | | | | 535 | | | | | 540 | | | | |
| Ser | Lys | Lys | Leu | Ser | Val | Ala | Ser | Gly | Thr | Ser | Val | Val | Glu | Ser | Asp |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Asp | Glu | Ile | Ala | Arg | Gly | Arg | Asn | Leu | Asn | Ala | Thr | Ser | Gln | Ser | |
| | | | | 565 | | | | 570 | | | | | | 575 | |
| Asn | Leu | Lys | Asn | Phe | Ser | Arg | Glu | Arg | Thr | Arg | Ser | Ser | Leu | Arg | Asn |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ile | Phe | Ser | Lys | Leu | Thr | Arg | Ser | Thr | Ser | Gln | Asp | Gln | Ser | Asn | Ser |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Phe | Arg | Arg | Gly | Ser | Ala | Ala | Arg | Ser | Thr | Ser | Thr | Ala | Arg | Leu | Gly |
| 610 | | | | | | 615 | | | | | | 620 | | | |
| Ser | Thr | Asn | His | Leu | Gly | Thr | Val | Ser | Lys | Arg | Pro | Pro | Leu | Ser | Gln |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Phe | Val | Asp | Trp | Arg | Ser | Glu | Gln | Leu | Ala | Asp | Trp | Ile | Ala | Glu | Ile |
| | | | | 645 | | | | | 650 | | | | | 655 | |
| Gly | Tyr | Pro | Gln | Tyr | Met | Asn | Glu | Val | Ser | Arg | His | Val | Arg | Ser | Gly |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Arg | His | Phe | Leu | Asn | Met | Ser | Met | Asn | Glu | Tyr | Glu | Gly | Val | Leu | Asn |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Ile | Lys | Asn | Pro | Val | His | Arg | Lys | Arg | Val | Ala | Ile | Leu | Leu | Arg | Arg |
| 690 | | | | | | 695 | | | | | 700 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Glu | Glu | Asp | Ile | Met | Glu | Pro | Ala | Asn | Lys | Trp | Asp | Val | His | Gln |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
| Thr | Leu | Arg | Trp | Leu | Asp | Asp | Ile | Gly | Leu | Pro | Gln | Tyr | Lys | Asp | Val |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Phe | Ala | Glu | Asn | Val | Val | Asp | Gly | Pro | Leu | Leu | Leu | Ser | Leu | Thr | Ala |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Asn | Asp | Ala | Val | Glu | Met | Lys | Val | Val | Asn | Ala | His | His | Tyr | Ala | Thr |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Leu | Ala | Arg | Ser | Ile | Gln | Phe | Leu | Lys | Lys | Ala | Asp | Phe | Arg | Phe | Asn |
| | 770 | | | | | 775 | | | | | 780 | | | | |
| Ala | Met | Glu | Lys | Leu | Ile | Asp | Gln | Asn | Ile | Val | Glu | Lys | Tyr | Pro | Cys |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 |
| Pro | Asp | Val | Val | Val | Arg | Trp | Thr | His | Ser | Ala | Thr | Cys | Glu | Trp | Leu |
| | | | | 805 | | | | | 810 | | | | | 815 | |
| Arg | Lys | Ile | Asp | Leu | Ala | Glu | Phe | Thr | Gln | Asn | Leu | Leu | Phe | Ala | Gly |
| | | | 820 | | | | | 825 | | | | | 830 | | |
| Val | Pro | Gly | Ala | Leu | Met | Ile | Tyr | Glu | Pro | Ser | Phe | Thr | Ala | Glu | Ser |
| | | 835 | | | | | 840 | | | | | 845 | | | |
| Leu | Ala | Glu | Ile | Leu | Gln | Met | Pro | Pro | His | Lys | Thr | Leu | Leu | Arg | Arg |
| | 850 | | | | | 855 | | | | | 860 | | | | |
| His | Leu | Thr | Ser | His | Phe | Asn | Gln | Leu | Leu | Gly | Pro | Lys | Ile | Ile | Ala |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 |
| Asp | Lys | Arg | Asp | Phe | Leu | Ala | Ala | Gly | Asn | Tyr | Pro | Gln | Ile | Ser | Pro |
| | | | | 885 | | | | | 890 | | | | | 895 | |
| Thr | Gly | Arg | Val | Lys | Val | Val | Lys | Lys | Gly | Phe | Ser | Leu | Thr | Arg | Lys |
| | | | 900 | | | | | 905 | | | | | 910 | | |
| Lys | Ala | Lys | Asn | Glu | Ile | Cys | Leu | Glu | Pro | Glu | Glu | Leu | Leu | Cys | Pro |
| | | 915 | | | | | 920 | | | | | 925 | | | |
| Gln | Val | Leu | Val | His | Lys | Tyr | Pro | Thr | Gly | Ala | Gly | Asp | Asn | Ser | Ser |
| | 930 | | | | | 935 | | | | | 940 | | | | |
| Phe | Glu | Ser | Ser | Asn | Val | | | | | | | | | | |
| 945 | | | | | 950 | | | | | | | | | | |

<210> 70
 <211> 15
 <212> PRT
 <213> human rhinovirus 2

<400> 70
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 1 5 10 15

<210> 71
 <211> 24
 <212> PRT
 <213> human immunodeficiency virus type 1

<220>
 <221> VARIANT
 <222> 14
 <223> Xaa = Any Amino Acid

<400> 71
 Tyr Asn Lys Arg Lys Arg Ile His Ile Gly Pro Gly Arg Xaa Phe Tyr
 1 5 10 15
 Thr Thr Lys Asn Ile Ile Gly Cys
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<210> 72
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
<223> selected from synthetic peptides derived from Homo sapiens CD52.

<400> 72
Gly Thr Ser Ser Pro Ser Ala Asp
1 5

<210> 73
<211> 10
<212> PRT
<213> Mesocricetus auratus

<400> 73
Ala Pro Lys Thr Asn Met Lys His Met Ala
1 5 10

<210> 74
<211> 15
<212> PRT
<213> Foot-and-mouth disease virus

<400> 74
Tyr Thr Thr Ser Thr Arg Gly Asp Leu Ala His Val Thr Thr Thr
1 5 10 15

<210> 75
<211> 18
<212> PRT
<213> Human poliovirus 1 Mahoney

<400> 75
Cys Val Thr Ile Met Thr Val Asp Asn Pro Ala Ser Thr Thr Asn Lys
1 5 10 15
Asp Lys

<210> 76
<400> 76
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<210> 77
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Derived from Homo sapiens MUC1 epithelial mucin glycoprotein.

<400> 77
Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr
1 5 10

<210> 78
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Derived from human immunodeficiency virus 1 gp 120 protein.

<400> 78

His Ile Gly Pro Gly Arg Ala Phe Gly Gly Gly
1 5 10

<210> 79

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Derived from human immunodeficiency virus 1 protease protein.

<400> 79

Met Ser Leu Pro Gly Arg Trp Lys Pro Lys
1 5 10

<210> 80

<211> 7

<212> PRT

<213> Neisseria meningitidis

<400> 80

Lys Asp Thr Asn Asn Asn Leu
1 5

<210> 81

<211> 18

<212> PRT

<213> Escherichia coli

<400> 81

Ala Val Pro Gln Gly Gln Gly Lys Val Thr Phe Ser Gly Thr Val Val
1 5 10 15
Asp Ala

<210> 82

<211> 53

<212> PRT

<213> Escherichia coli

<400> 82

Pro Cys Gly Ile Asp Ala Ala Gln Ser Ala Asp Gln Ser Val Asp Phe
1 5 10 15
Gly Gln Ile Ser Lys Val Phe Leu Asp Asn Asp Gly Gln Thr Thr Pro
20 25 30
Lys Ala Phe Asp Ile Lys Leu Val Asn Cys Asp Ile Thr Asn Tyr Lys
35 40 45
Lys Pro Ala Thr Gly
50

<210> 83

<211> 33

<212> PRT

<213> Escherichia coli

<400> 83

Met Ile Lys Ser Thr Gly Ala Leu Leu Leu Phe Ala Ala Leu Ser Ala
1 5 10 15
Gly Gln Ala Ile Ala Ser Asp Val Ala Phe Arg Gly Asn Leu Leu Asp
20 25 30
Arg

<210> 84
 <211> 37
 <212> PRT
 <213> Escherichia coli

<400> 84
 Pro Cys His Val Ser Gly Asp Ser Leu Asn Lys His Val Val Phe Lys
 1 5 10 15
 Thr Arg Ala Ser Arg Asp Phe Trp Tyr Pro Pro Gly Arg Ser Pro Thr
 20 25 30
 Glu Ser Phe Val Ile
 35

<210> 85
 <211> 55
 <212> PRT
 <213> Escherichia coli

<400> 85
 Met Arg Leu Arg Phe Ser Val Pro Leu Phe Phe Phe Gly Cys Val Phe
 1 5 10 15
 Val His Gly Val Phe Ala Gly Pro Phe Pro Pro Pro Gly Met Ser Leu
 20 25 30
 Pro Glu Tyr Trp Gly Glu Glu His Val Trp Trp Asp Gly Arg Ala Ala
 35 40 45
 Phe His Gly Glu Val Val Arg
 50 55

<210> 86
 <211> 15
 <212> PRT
 <213> Escherichia coli

<400> 86
 Pro Ala Cys Thr Leu Ala Met Glu Asp Ala Trp Gln Ile Ile Asp
 1 5 10 15

<210> 87
 <211> 36
 <212> PRT
 <213> Escherichia coli

<400> 87
 Met Lys Lys Ile Arg Gly Leu Cys Leu Pro Val Met Leu Gly Ala Val
 1 5 10 15
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 20 25 30
 Lys Leu Ile Ile
 35

<210> 88
 <211> 34
 <212> PRT
 <213> Escherichia coli

<400> 88
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 1 5 10 15
 Ile Gln Thr Leu Ser Pro Asp Gly Ser Arg His Gln Lys Asp Phe Ser
 20 25 30
 Val Gly

<210> 89
 <211> 31
 <212> PRT
 <213> Escherichia coli

<400> 89
 Met Ala Arg Leu Ser Leu Phe Ile Ser Leu Leu Leu Thr Ser Val Ala
 1 5 10 15
 Val Leu Ala Asp Val Gln Ile Asn Ile Arg Gly Asn Val Tyr Ile
 20 25 30

<210> 90
 <211> 39
 <212> PRT
 <213> Escherichia coli

<400> 90
 Pro Pro Cys Thr Ile Asn Asn Gly Gln Asn Ile Val Val Asp Phe Gly
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 20 25 30
 Thr Ile Ser Ile Ser Cys Thr
 35

<210> 91
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Theoretical sequence designed to show proper and improper joining elements

<400> 91
 gggggggggggg 10

<210> 92
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<210> 93
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<210> 94
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 <210> 95
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 <210> 96
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 <400> 96
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 <210> 97
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 <400> 97
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 <210> 98
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 <400> 98
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 <210> 99
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 elements

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<210> 100
 <211> 10
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<220>
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<400> 100
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<210> 101
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 101
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<210> 102
 <211> 10
 <212> DNA
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<220>
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<400> 102
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<210> 103
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Theoretical sequence designed to show proper and improper joining
 elements

<400> 103
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<210> 104
 <211> 10
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<220>

<223> Theoretical sequence designed to show proper and improper joining elements

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<210> 105
<211> 10
<212> DNA
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cgctgagatg 10
<210> 106
<211> 10
<212> DNA
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<400> 106
gcgactctac 10
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<211> 10
<212> DNA
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<220>
<223> Theoretical sequence designed to show proper and improper joining elements

<400> 107
aacagctaac 10
<210> 108
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<400> 108
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<210> 109
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<223> Theoretical sequence designed to show proper and improper joining elements

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 <400> 110
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 <210> 111
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 <210> 112
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 <400> 112
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 <210> 113
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 <400> 113
 ttttgccaac 10

 <210> 114
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 <212> DNA
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 <223> Theoretical sequence designed to show proper and improper joining elements

 <400> 114
 aaaacgctta 10

<210> 115
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 <212> DNA
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 <220>
 <223> Theoretical sequence designed to show proper and improper joining elements

 <400> 115
 ctcaatttgc 10

 <210> 116
 <211> 10
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 <223> Theoretical sequence designed to show proper and improper joining elements

 <400> 116
 gagttaaacg 10

 <210> 117
 <211> 10
 <212> DNA
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 <220>
 <223> Theoretical sequence designed to show proper and improper joining elements

 <400> 117
 tgggggatggt 10

 <210> 118
 <211> 10
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Theoretical sequence designed to show proper and improper joining elements

 <400> 118
 acccctacaa 10

 <210> 119
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 <212> DNA
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 <220>
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 <400> 119
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 <210> 120
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<212> DNA
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 <400> 120
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 <210> 121
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 <400> 121
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 <210> 122
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 <400> 122
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 <210> 123
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 <210> 125
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 elements

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 <210> 126
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<210> 134
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 <210> 140
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<210> 141
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 <210> 143
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 <220>
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 <220>
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 <222> 8, 9, 10, 11
 <223> n = residue with no base, essentially glycines that allow the DNA to fold back on itself to form the triple helix

 <400> 143
 cccccccnnn nccccccc 18

 <210> 144
 <211> 7
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Theoretical sequence designed to show proper and improper joining elements

 <400> 144
 gggggggg 7

 <210> 145
 <211> 18
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<220>
<221> misc_feature
<222> 8, 9, 10, 11
<223> n = residue with no base, essentially glycines that allow the DNA to
fold back on itself to form the triple helix

<400> 145
ccctttttnnn nttttccc                                18

<210> 146
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<220>
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elements

<400> 146
gggaaaaa                                              7

<210> 147
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elements

<220>
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<222> 8, 9, 10, 11
<223> n = residue with no base, essentially glycines that allow the DNA to
fold back on itself to form the triple helix

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tctctctnnn ntctctct                                18

<210> 148
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<212> DNA
<213> Artificial Sequence

<220>
<223> Theoretical sequence designed to show proper and improper joining
elements

<400> 148
agagaga                                              7

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elements

<220>
<221> misc_feature

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<222> 8, 9, 10, 11
 <223> n = residue with no base, essentially glycines that allow the DNA to fold back on itself to form the triple helix

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<210> 150
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<220>
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<400> 150
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<210> 151
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<400> 151
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<210> 152
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<400> 152
 gatacaagat 10

<210> 153
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<400> 153
 tctgtattgg 10

<210> 154
 <211> 10
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<220>

<223> Theoretical sequence designed to show proper and improper joining elements

<400> 154
ataacctgac 10

<210> 155
<211> 10
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<220>
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<400> 155
gggttttccc 10

<210> 156
<211> 10
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<220>
<223> Theoretical sequence designed to show proper and improper joining elements

<400> 156
gatcttgatc 10

<210> 157
<211> 6
<212> PRT
<213> Escherichia coli

<400> 157
Asn Lys Gly Gln Gly Glu
1 5

<210> 158
<211> 14
<212> PRT
<213> Homo sapiens

<400> 158
Ser Gly Phe Asn Ala Asp Tyr Glu Ala Ser Ser Ser Arg Cys
1 5 10

<210> 159
<211> 17
<212> PRT
<213> Avian sarcoma virus 17

<400> 159
Pro Ile Asp Met Glu Ser Gln Glu Arg Ile Lys Ala Glu Arg Lys Arg
1 5 10 15
Met

<210> 160
<211> 10
<212> PRT

<213> Homo sapiens
 <400> 160
 Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
 1 5 10
 <210> 161
 <211> 15
 <212> PRT
 <213> Murine sarcoma virus
 <400> 161
 Glu Glu Tyr Ser Ala Met Arg Asp Gln Tyr Met Arg Thr Gly Glu
 1 5 10 15
 <210> 162
 <211> 11
 <212> PRT
 <213> Human herpes virus type 1
 <400> 162
 Gln Pro Glu Leu Ala Pro Glu Asp Pro Glu Asp
 1 5 10
 <210> 163
 <211> 11
 <212> PRT
 <213> Enterobacteria phage T7
 <400> 163
 Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly
 1 5 10
 <210> 164
 <211> 5
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 <213> Artificial Sequence
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 <223> Identified from non-biological peptide library.
 <400> 164
 Tyr Gly Gly Phe Leu
 1 5
 <210> 165
 <211> 15
 <212> PRT
 <213> Artificial
 <220>
 <223> Identified from M13 bacteriophage peptide display library.
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 1 5 10 15
 <210> 166
 <211> 5
 <212> PRT
 <213> Artificial

<220>
 <223> Identified from non-biological peptide library.

 <400> 166
 Thr Pro His Pro Gln
 1 5

 <210> 167
 <211> 5
 <212> PRT
 <213> Artificial

 <220>
 <223> Identified from non-biological peptide library.

 <400> 167
 Met His Pro Met Ala
 1 5

 <210> 168
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Derived from S-peptide fragment of ribonuclease A protein, probably
 from Bos taurus.

 <400> 168
 Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 1 5 10 15

 <210> 169
 <211> 5
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Derived from a consensus recognition sequence of cAMP-dependent
 protein kinase (protein kinase A).

 <400> 169
 Arg Arg Ala Ser Val
 1 5

 <210> 170
 <211> 12
 <212> PRT
 <213> Artificial

 <220>
 <223> Identified from M13 bacteriophage peptide display library.

 <400> 170
 Val Thr Ser Pro Asp Ser Thr Thr Gly Ala Met Ala
 1 5 10

 <210> 171
 <211> 12
 <212> PRT
 <213> Artificial

<220>
 <223> Identified from M13 bacteriophage peptide display library.

 <400> 171
 Ala Ala Ser Pro Thr Gln Ser Met Ser Gln Ala Pro
 1 5 10

 <210> 172
 <211> 12
 <212> PRT
 <213> Artificial

 <220>
 <223> Identified from M13 bacteriophage peptide display library.

 <400> 172
 Ala Gln Asn Pro Ser Asp Asn Asn Thr His Thr His
 1 5 10

 <210> 173
 <211> 12
 <212> PRT
 <213> Artificial

 <220>
 <223> Identified from M13 bacteriophage peptide display library.

 <400> 173
 Ala Ser Ser Ser Arg Ser His Phe Gly Gln Thr Asp
 1 5 10

 <210> 174
 <211> 12
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Identified from M13 bacteriophage peptide display library.

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 Trp Ala His Ala Pro Gln Leu Ala Ser Ser Ser Thr
 1 5 10

 <210> 175
 <211> 12
 <212> PRT
 <213> Artificial

 <220>
 <223> Identified from M13 bacteriophage peptide display library.

 <400> 175
 Ala Arg Tyr Asp Leu Ser Ile Pro Ser Ser Glu Ser
 1 5 10

 <210> 176
 <211> 12
 <212> PRT
 <213> Artificial

 <220>
 <223> Identified from M13 bacteriophage peptide display library.

<400> 176
 Thr Pro Pro Arg Pro Ile Gln Tyr Asn His Thr Ser
 1 5 10

<210> 177
 <211> 12
 <212> PRT
 <213> Artificial

<220>
 <223> Identified from M13 bacteriophage peptide display library.

<400> 177
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 1 5 10

<210> 178
 <211> 12
 <212> PRT
 <213> Artificial

<220>
 <223> Identified from M13 bacteriophage peptide display library.

<400> 178
 Gly Thr Leu Ala Asn Gln Gln Ile Phe Leu Ser Ser
 1 5 10

<210> 179
 <211> 12
 <212> PRT
 <213> Artificial

<220>
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<400> 179
 His Gly Asn Pro Leu Pro Met Thr Pro Phe Pro Gly
 1 5 10

<210> 180
 <211> 12
 <212> PRT
 <213> Artificial

<220>
 <223> Identified from M13 bacteriophage peptide display library.

<400> 180
 Arg Leu Glu Leu Ala Ile Pro Leu Gln Gly Ser Gly
 1 5 10